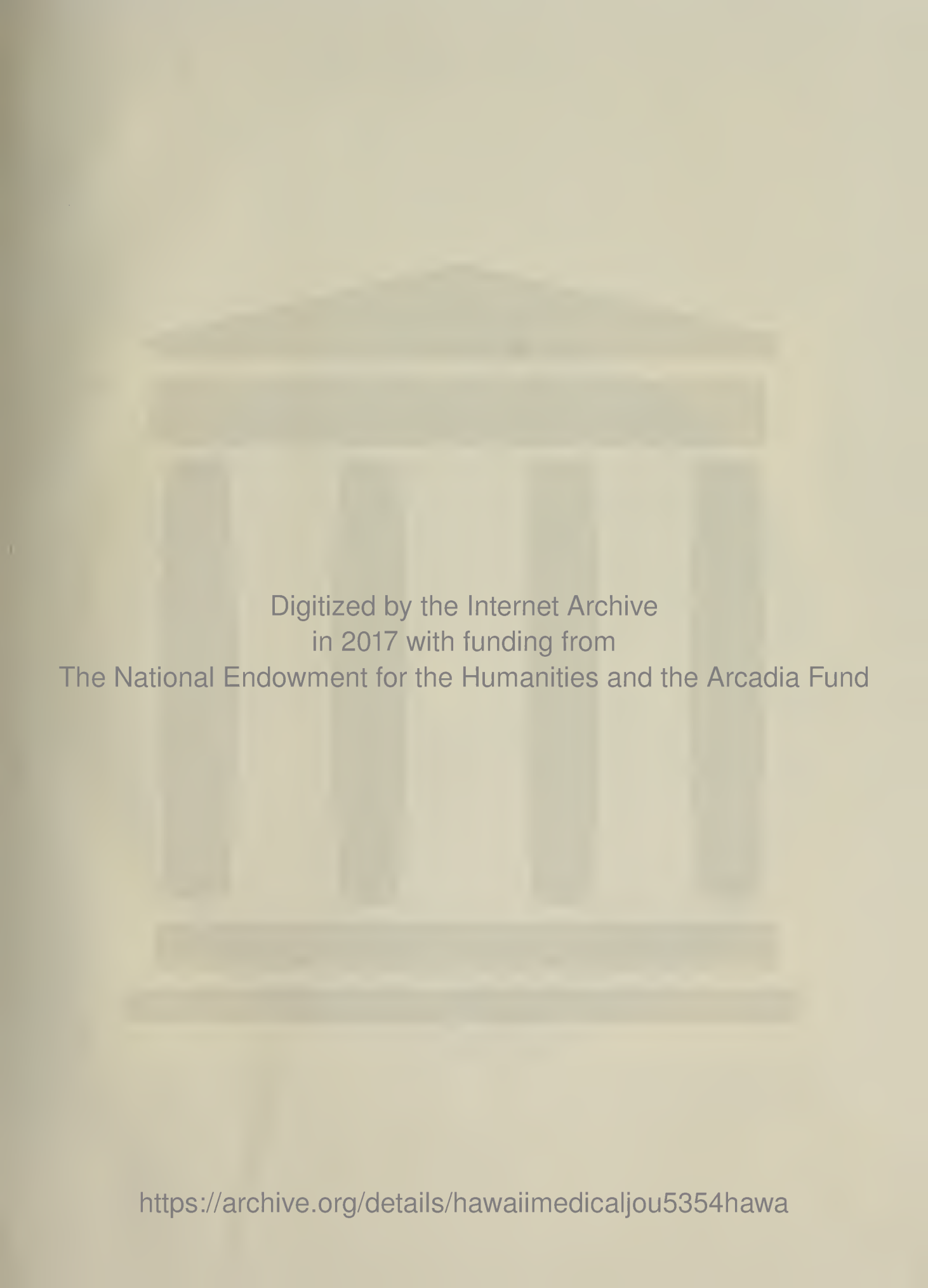
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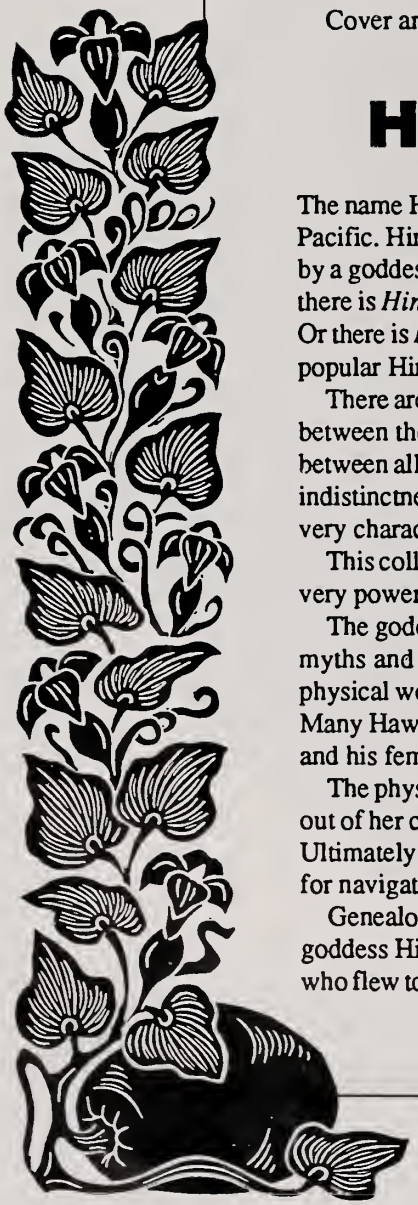
HAWAII MEDICAL JOURNAL

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Hina—the goddess

The name Hina, or variations thereof, occurs in mythologies throughout the Pacific. Hina usually refers to a strong female creative force as personified by a goddess over a specific domain. In Hawaiian mythology, for example, there is *Hina puku i'a* (Hina: gathering seafood), the goddess of fishermen. Or there is *Hina 'opu hala ko'a* who gave birth to all reef life. Another more popular Hina is the goddess of the moon.

There are many Hina in Hawaiian myths and legends and the distinctions between them are not always clear. And any attempt to rigidly distinguish between all the individual Hina could surely be challenged. Furthermore the indistinctness between the various Hina adds a wonderful poetic ambiguity very characteristic of Hawaiian language and tradition.

This collection of Hina images is intended to stimulate new interest in the very powerful and pervasive mythology of the goddess and all her forms.

The goddess Hina appears as a strong female force in Hawaiian creation myths and chants. She is seen as a creative and productive power of the physical world and a common ancestor to many mythical and real persons. Many Hawaiian genealogies trace their way back to the very first gods, Ku and his female counterpart, Hina.

The physical world was enhanced when Hina released the moon and stars out of her calabash. They flew up to take their present place in the heavens. Ultimately then Hina must be credited for providing at least the raw material for navigational achievements as these are based on the heavenly bodies.

Genealogical chants trace their way back to the very moment when the goddess Hina gave birth to her famous son Maui. Maui was born of a cock who flew to the housetop to assume a dominant position in the ancestral line.

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The Editorial Board and HMA staff are indebted to **Dietrich Varez** and **Ramsay Galleries** for providing cover art for the new format of the *Hawaii Medical Journal* starting with this issue.

The block prints and description are from **Hina—the goddess,** by renowned Big Island artist **Dietrich Varez.** Our first cover, the "Birth of Maui," was selected because the new *Hawaii Medical Journal* started on the island of Maui at the Annual Meeting of the Hawaii Medical Association. It was on Maui where I was appointed editor of the *Journal* and the *Journal* was given a new lease on life by the Association.

Norman Goldstein MD, Editor

The New Hawaii Medical Journal

The December issue of the *Journal*—the special issue on Computers in Medicine—was **Fred Reppun's** last as our editor. After nine years of guiding the authors, the HMA Publications Committee with **Henry Yokoyama,** and the staff of the Hawaii Medical Association, Fred has retired as our editor.

Over the years, working with the late **Harry Arnold, Jr.** and **Doris Jasinsky,** Fred has reviewed hundreds of manuscripts and letters. He has always promoted manuscripts from authors in Hawaii or with Hawaii connections—accepting papers from MDs, PhDs and "common folks with something important to say."

Recently when I had a very leisurely lunch meeting with Fred, he passed on to me so many words of wisdom and experience—I wish we had our lunch years ago, Fred.

Dr Reppun recalled some of the advice he gave to a medical school class about writing scientific articles.

The Reppun principles:

1. Write as if you were communicating with a dummy;
2. Use proper English and grammar;
3. Keep in mind that it will be peer reviewed;
4. Have a heart for the poor editor, ie, submit your manuscript double-spaced or triple-spaced with wide margins at the top, bottom and on both sides and read a copy of the *Journal* ahead of time to see how that editor likes to see it done."

Fred, it has been a pleasure to have shared the bagels, lox and cream cheese with you. Your editorials and comments in the *Journal* over the years have been a great teaching experience for our readers and me. We are not going to let you pack away your Apple computer yet, however. Thanks for the book review that appears in this issue, "Ethical Health Care Reform" by **Ignacio Rippol MD.** We look forward to more reviews and comments from you.

When I asked Fred for his resume, Fred politely declined with "I'd rather not be eulogized—acting speaks louder than words." Right you are, Fred, and that's why we reproduce the commendation by the Hawaii Medical Association House of Delegates here:

Hawaii Medical Association
House of Delegates
Resolution—A Commendation

WHEREAS, **J. I. Frederick Reppun MD** has served as editor of the *Hawaii Medical Journal* since 1985. He took the helm of the HMA's medical magazine with gusto and enthusiasm, published articles that titillated the opinions of members and updated physicians about new procedures, techniques and findings; and

WHEREAS, **Dr Reppun** devoted countless hours to reading, reviewing, and editing articles for the *Journal*, and he also worried about the finances and keeping the *Journal* viable; and

WHEREAS, Editor Reppun stayed abreast of topics—medical, political, social—never failing to offer an opinion on any one of them by presenting his ideas on a myriad of subjects including health system reform, nuclear waste, and environmental issues in clear, concise editorials for his readers; and

WHEREAS, **Dr Reppun,** born in Tirljian, Russia, a graduate of Harvard School of Medicine, and a family practitioner for 50 years, when appointed editor in 1985, vowed in his credo to the readers of the *Journal* to instill in the minds of all that the *"Hawaii Medical Journal* is **the** organ of the association," and that he would "become the ombudsman for the membership..."; and

WHEREAS, before he passes the quill to a new editor in December 1993, **Dr Reppun** has been making certain the *Journal* will continue to be published by the Hawaii Medical Association; now, therefore, be it

RESOLVED, that the Hawaii Medical Association House of Delegates express its gratitude to **Dr Reppun** for serving as its *pro bono* editor the past nine years, for providing inspiration and clarity to *HMJ* readers, and for continuing the goals set forth by **Harry L. Arnold, Jr., MD** in 1941 to provide a means for Hawaii physicians to communicate with each other as well as with the rest of the world, in spite of being a tiny archipelago state in the middle of the Pacific Ocean.

We not only have a "new skin" (our cover art), but we have new "muscles" and new "brains" in our first issue in 1994. We have a new printer, Pacific Printers, and a much-expanded Editorial Board.

When the Hawaii Medical Association considered stopping the *Journal* after arrangements with Crossroads Press ceased with the December 1993 issue, the Publications Committee reviewed possible alternatives to keep the 53-year-old organ of our Association viable. We then contracted with Pacific Printers to print the *Journal* for at least a year.

HMA staff **Becky Kendro, Jan Estioko** and **Susanne Weeks** will prepare the manuscripts, coordinate advertising and arrange for distribution of the *Journal* to our 1,800 members and other readers.

I accepted the post of Editor of the *Journal* with some concern: Concern for the time required to serve as editor, concern for the climate of publications in general and medical journals specifically, concern for the future of medicine, health system reform, our medical school, the role of military in Hawaii and the Pacific, and a host of other intriguing problems ahead in the '90s and beyond.

As most of my friends and associates know, I am an optimistic workaholic and enjoy wearing many hats. Be it at the Hawaii Medical Library, our Medical School, Tripler Army Medical

Center, the Hawaii Theatre Center, the art community in Hawaii, the American Cancer Society ("Practice Safe Sun, Hawaii") and other local and national activities and organizations; I thrive on it.

Oh yes, I do have some editorial experience. I am on the Editorial Boards of the *Journal of Dermatologic Surgery and Oncology* and the *International Journal of Dermatology*. Also I have been with the *Hawaii Medical Journal* for the past 12 years.

There is no way I could do everything, wearing so many hats, if I did not have the support of my wife, **Ramsay**, and the assistance of my office staff and the Boards of Directors and staffs of the many organizations in which I actively participate.

I look forward to expanding the *Journal* and the membership of the Hawaii Medical Association. With our new and dedicated Editorial Board, we will continue the traditions of my mentor and my idol, the late **Dr Arnold, Jr.**

Book Review

Ethical Health Care Reform
Ignacio Ripoll MD. Hampton Roads Publishing Company, Norfolk, VA 23502. $8.95, 78 pages.

The subtitle of this small volume is "Person-Focused Reorganization." Dr Ripoll is an associate professor of internal medicine at Eastern Virginia Medical School and at the DePaul Medical Center.

Ripoll's main thesis is that the physician should be in charge. There is a strong movement here in Hawaii to do just that; it is a town-and gown-thrust that promises to enter the field and make a bid for managed care—managed by physicians if President Clinton's Health Care Reform plan survives Congressional debate and becomes the law of the land, and if the President signs the Act.

In the preface, Robert V. Stanek, Executive Vice President of the DePaul Medical Center, also sets the tone for the premise by stating that much of what is required must come from physicians, but physicians must empower their patients to join them and thus become less enamored of the physicians' power. Stanek goes on to say, however, that he feels that the way to go is via managed care on a 50/50-basis between physicians and hospital administrators. This seems to leave the patient out of the power equation.

In his introduction, Ripoll states, "We cannot save money by making health care less available by reducing the income of hospitals and physicians or by legislating mandatory cost-controls." He criticizes the current system of health care for "...not promoting health; it fights disease and mostly at the time when it is already far advanced."

The reviewer disagreed with this concept; it is for the failure of ease of access—the many restrictions placed on access to medical care—that professionals are so unfairly castigated. Office practitioners spend most of their time maintaining the health of patients and trying to preach prevention—often to deaf ears.

The author says very little about the role of patients—their obligation and their responsibility—in maintaining good health. However, in the following chapters of the small book, he makes some good analyses of what can be improved. For example: Our problem is that the health care system has changed from physicians being the altruistic healers—the good samaritans—to making a profit, "...by trying to serve two masters (health care and business), it is serving neither adequately."

Writing about corporate responsibility toward physicians, Ripoll states, "The physician should never be placed in a position that requires choosing between the patient's health and the corporation's welfare—or even society's welfare. (If, however, he [sic] finds himself in such a dilemma, he should choose the patient's welfare.)"

"Medicine is a ministry and not a job." To this the reviewer says amen. Dr Ripoll says further: "Corporations and hospital administrators should honor that mission also."

In the last chapter, "Grassroots Reorganization: A Call to Action," Dr Ripoll extols managed care as the wave of the future, although he also admits there is some truth in the allegation "...it fosters incentive to motivate physicians to increase their income through providing less patient care..." He then ameliorates that factor by suggesting that by bringing in the private practitioners to make the coalition a foursome—which he calls a "flexible alliance"—they will work symbiotically. Indeed? The reviewer suggests taking a wait-and-see approach as managed care companies have *not* been able to reduce costs!

Ripoll quotes David Bernd, CEO of Norfolk General Hospital in Virginia:

"Many of the deficiencies of managed care companies stem from the fact that they consider physicians a manufacturing tool of their health care product, ignoring the fact that in the health care equation there is ultimately one consumer: The patient, and one provider: The physician (the insurance company is the intermediary)."

Finally, Dr Ripoll points out that health care does not stand alone; it interacts with poverty, unemployment and the level of education—all within the community. His bottom line is that physicians should be the leaders in a community-wide network to resolve the problem of too many expensive and unnecessary visits to the hospital emergency room and not enough physicians doing frontline primary care.

The reviewer agrees and applauds the move to bring town and gown together in Hawaii to assume this leadership, albeit to include the administrators of the hospitals, *and* our patients, in order to bring universal access to health care in our community. The book makes for easy reading; it is concise and fairly well organized.

J. I. Frederick Reppun MD

Books received

The following books were received by the *Hawaii Medical Journal* for review. Selections are reviewed according to the interests of readers and as space permits.

Medical/health sciences:

Castleman, Michael. **The healing herbs.** Emmaus, Pa: Rodale Press, 1991. 436 p. $27.98. Hardcover. ISBN: 0-87857-934-6.

Krause, Beatrice H. **Plants in Hawaiian culture.** Honolulu, Hawaii: University of Hawaii Press, 1993. 345 p. $26.95. Softcover. ISBN: 0-8248-1225-5.

Starr, Paul. **The logic of health-care reform.** Knoxville, Tenn: Grand Rounds Press, 1992. 83 p. $21.95. Hardcover. ISBN: 1-879736-09-8.

Hawaii:

Borg, Jim. **Tigers of the sea: Hawaii's deadly sharks.** Honolulu, Hawaii: Mutual Publishing, 1993. 88 p. $12.95. Softcover. ISBN: 1-56647-048-x.

Hoover, John P. **Hawaii's fishes: a guide for snorkelers, divers, and aquarists.** Honolulu, Hawaii: Mutual Publishing, 1993. 178 p. $16.95. Softcover. ISBN: 1-56647-001-3.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Military medicine manages approximately 16% of the inpatient hospital beds in Hawaii and operates one of the two largest tertiary care hospitals in the state. Inpatient and outpatient services are provided for a local population of 279,000 active duty, dependent, Veterans Affairs and retired beneficiaries. A military referral populatio.. of 186,000 from the Pacific theater and Asian continent utilize Hawaii's military medical facilities. A population of 384,000 independent Pacific island nation beneficiaries comprise the remainder of the population served by military medical facilities Hawaii.

The military medical community in Hawaii is a diverse group of medical activities. We are composed of a large tertiary care teaching hospital, many small ambulatory care clinics, specialized military clinics (flight surgeons, diving medical officers and operational detachments) and fleet medical activities on shore and at sea. Army, Navy, Air Force and Marine Corps facilities are staffed by more than 500 active duty physicians in Hawaii.

Hawaii's civilian medical community interfaces with military medicine through shared education programs of the University of Hawaii John Burns School of Medicine, the Department of Veterans Affairs, local specialty societies, medical consultation, CHAMPUS referrals and collaborative research efforts.

In the months to come this column will bring the reader the people and activities of military medicine in Hawaii. Reports of current medical endeavors within the community, news of changes in the rapidly evolving Department of Defense federal health care system, and activities of common interest to military and civilian medical practitioners will be reported.

It is hoped this forum will foster the exchange of ideas, knowledge and enthusiasm for medicine within our community.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

HMA Alliance

Susan L. Foo, President

Happy New Year! Nineteen hundred and ninety-four is an especially auspicious year for the Hawaii Medical Association Alliance. This is our 45th anniversary for celebrating and remembering the many worthy projects and beneficial health programs for which the Alliance members have so generously volunteered their time, efforts, and money throughout four-and-a-half decades. The HMA Alliance has collectively raised hundreds of thousands of dollars for many charitable organizations in Hawaii. Through the dedication and community service commitment of the medical friends and spouses of the HMA Alliance, a positive impact has been made for the following organizations and agencies: Queen's Medical Center, Saint Francis Medical Center, Kuakini Medical Center, Castle Hospital, Hilo Hospital, Wilcox Hospital, Maui Memorial Hospital, MADD, American Cancer Society, Honolulu Police Drug Awareness Program, Kaiser Medical Center Keiki Health Fair, Hawaii Stress Center, Outdoor Circle, Hurricane Iniki Relief Projects, Waianae Coast Comprehensive Health Clinic, The Life Foundation, Child and Family Service, Hospice Hawaii, Keiki Immunization Awareness, Blood Bank of Hawaii, Aloha Medical Mission, HUGS, Guest Day Seminars to Educate the Public on Health Issues, Condom Coalition (for the prevention of HIV/AIDS), The Life Care Center, Outreach, Children's Advocacy Program, Feeding the Homeless, Whistles for the Prevention of Violent Crimes against Women and Children, UH John A. Burns School of Medicine Health Fair and Scholarship Program. It has always been our goal to promote quality health awareness and care for all of our community. "Turning a dream into a promise, turning imagination into reality, and turning personal hope into positive change." These are the accomplishments of the Hawaii Medical Association Alliance.

On this positive note, we would like to extend an invitation to a very special HMA Alliance project to benefit the John A. Burns School of Medicine Endowment Scholarship Program to be held March 19, 1994 at the Ilikai Hotel Ballroom in Honolulu. Reservations are being taken by Joella at the HMA office, 536-7702. Please join us for this most worthy and exciting event! Thank you very much for your continued support.

Historical Notes

John A. Breinich
Hawaii Medical Library

As the 1994 edition of the *Hawaii Medical Journal* begins, we welcome our new editor, Dr Norman Goldstein. Dr Goldstein is a well-known and respected dermatologist, just as the editor of the *Journal* was 50 years ago, Dr Harry L. Arnold, Jr. At that time, the *Hawaii Medical Journal* was published bi-monthly by the Hawaii Territorial Medical Association which was incorporated under the Monarchy in 1856. The January/February 1944 issue of the *Journal* (Volume 3 No. 3) had three original articles including one by Dr Arnold and Dr Douglas B. Bell entitled "Kissing bug bites."

With the war continuing, there still were concerns about Emergency Medical Services, formerly called Medical Preparedness. Dr Arnold states that "Upon the completion of two years' activity, the Territory of Hawaii can rest assured that its Emergency Medical Service will continue to render efficient service and provide the maximum in civilian medical protection. Recent alerts and maneuvers have shown definitely that its personnel, as a result of their regular musters and training sessions, are capable of manning their posts efficiently and without confusion."

We welcome Dr Goldstein to the *Hawaii Medical Journal* where 50 years ago another dermatologist made a lasting mark on the medical profession in Hawaii.

Medical School Hotline

John A. Burns School of Medicine

The John A. Burns School of Medicine at the University of Hawaii looks forward to communicating with the readers of the *Hawaii Medical Journal*. Beginning with the February issue, the School's programs in medical education and research will be featured in this column. Among the short articles will be the teaching activities in Problem–Based Learning, research in clinical and basic sciences, and special programs such as *Imi Ho'ola*, *Kulia* and the Native Hawaiian Center of Excellence.

The articles will bring the community closer to the state–supported school that trains about half of all physicians practicing in the Pacific Basin. It is a one-of-kind school with a very diverse multiethnic student body. In addition, its medical education curriculum has been designated by Harvard University as one of the 10 most innovative in North America.

We look forward to submitting articles for publication with enthusiasm and reader comments will be welcomed.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

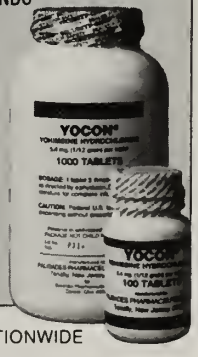
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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HMA President's Message Andrew Don MD

Hawaii Health QUEST—What's it all about?

On April 19, 1993, the State of Hawaii Department of Human Services submitted a waiver application to the Health Care Financing Administration (HCFA) in Washington, DC to establish Hawaii Health QUEST, a statewide demonstration project to provide medical, dental and mental health benefits through a competitive managed care delivery system to individuals currently covered by Medicaid's Aid for Dependent Children (AFDC), General Assistance (GA) programs and those covered by the State Health Insurance Program (SHIP). The recipients in all other Medicaid programs will remain in the existing Medicaid fee-for-service program. The waiver for Hawaii was granted by HCFA.

Who qualifies for QUEST?

About 120,000 individuals are likely to qualify for QUEST. AFDC recipients include pregnant women and infants with family income levels up to 185% of the federal poverty level. Children are included in AFDC with family income levels differing depending on age but not to exceed 100% of federal poverty level. The GA program is fully State-funded and provides medical assistance to those who do not meet Medicaid criteria but meet the financial criteria. This population consists mainly of single adults who are temporarily disabled and unable to work. The income levels of the GA individuals and families must be below 62.5% of the federal poverty level or must be insufficient to meet monthly medical expenses. Those enrolled in the SHIP program are generally the gap group who are unemployed, spouses of low-income workers who do not qualify for medical assistance, part-time workers employed for less than 20 hours a week, children of low-income workers, self-employed or seasonal workers and students. To qualify for SHIP, the person may not have a family income exceeding 300% of the federal poverty scale and may not be covered by any health insurance or government program. Co-payments for SHIP coverage are based on family income.

Why is QUEST being developed?

The number of Medicaid recipients has increased dramatically the last several years with the decline in employment and tourism, the results of natural disasters, etc. The State Legislature has been faced with million dollar shortfalls in the Medicaid budget; however, the Medicaid and SHIP budgets are expected to increase dramatically. The Department of Human Services developed the waiver application for QUEST without legislative action, believing current law enabled them to do so. HMA protested the lack of involvement by physicians and others in determining this direction. Legislators have held public hearings and hundreds of people voiced their concern, including current Medicaid recipients.

When will QUEST be implemented?

The start-up date for QUEST has been postponed twice; now it is scheduled to begin on July 1, 1994. The State has published specifications for the program and *any health care plan* can bid for all or part of the population. The deadline for submitting proposals to DHS was extended to February 4, 1994. Commencement of negotiations between DHS and bidders is extended to March 4 with the contracts expected to be awarded by April 1. Rumor has it that 6 or 7 bidders are expected to meet the deadline.

Who can be a primary care provider (PCP) and what about reimbursement?

The health plans that are awarded the contracts may reimburse providers and subcontactors in any manner; it is likely to be capitated payment or discounted fee-for-service. Each health plan will be required to provide each QUEST recipient the opportunity to select a PCP, which is defined as a physician or registered nurse who must be a family nurse practitioner, pediatric nurse practitioner, or a certified nurse midwife. If the recipient does not select a PCP, one will be assigned by the health plan. The health plan is not required to provide nurse practitioners as PCPs but can do so: "Within the scope of Hawaii's licensing laws, the health plan and its providers determine what services nurse practitioners provide, including their relationship with the health plan physicians, the conditions under which they provide services, and whether or not nurse practitioners of the types included in the definition of PCP will function as PCPs."

What about services, quality of care, and co-payments?

The health plan must provide all medically necessary services and would be responsible for determining the medical necessity of the services. The benefits package would include a schedule of co-payments ranging in price from $5 for physician office visits to $25 for inpatient hospital admissions. A co-payment for prescriptions would be $2 for generic drugs and $5 for multisource brands, and services such as rehab, detox, maternity, urgent care, home health, managed mental health, radiology, and lab would not require co-payments.

Some of the concerns raised by the Hawaii Medical Association

A copy of HMA's letter to the Department of Human Services was sent to all members in September. In that letter HMA questioned the fast-track, lack of involvement by providers, the definition of a primary care provider and its concern about quality of care.

HMA is concerned about gatekeepers and whether a two-tiered level of care will result in increased utilization and cost of care. Gatekeepers also face liability problems for failure to refer. Treatment decisions must be made by physicians based on their evaluation of the patient's needs.

Currently PCP physicians are designated as family and general practitioners, general internists, pediatricians or obstetri-

cians/gynecologists. Many surgical and medical specialists currently provide primary care to certain populations, and HMA believes they should continue their relationship.

Since QUEST is a demonstration project funded with federal and state dollars, all providers must abide by HCFA rules that are very strict and cumbersome.

The expertise of practicing physicians is absolutely essential in the development and monitoring of this program.

QUEST requires health plans to provide medical and social service needs such as transportation; however, the requirement for managing these services is not clear.

The requirement of providing data to QUEST is likely to filter to the physicians. It is not clear what information will be required, how the information will be used and interpreted.

Physicians will be faced with collecting co-payments, knowing who is included or excluded and dealing with the persons who refuse or are unable to provide co-payments.

A formula for overrun costs is to be shared between the State and health care plans. It is not clear how physicians will be affected should an overrun occur.

The retroactive period to cover patients under Medicaid is three months; applications for QUEST must be filed within 5 days of service by a physician or hospital and no retroactive coverage is provided.

The Hawaii Medical Association is closely monitoring the Hawaii Health QUEST program and has received copies of the application for federal assistance, the request for proposals, the amendments to the request for proposals, and the written response to questions posed by the bidders and public. These documents are very large and are available for viewing at the HMA office. As information is received, HMA members can be assured they will be informed.

Highlights of the 1993 HMA House of Delegates

October 15 to 17, 1993

The 137th HMA Annual Meeting was held at the Ritz-Carlton, Kapalua on the island of Maui. At the House of Delegates meeting, the following delegates were seated: Drs A. Don, F. Holschuh, J. Spangler, S. Wallach, L. Howard, P. Blanchette, R. Lee-Ching, M. Cheng, R. Goodale, B. Shitamoto, C. Lehman, C. Kadooka, R. Adaniya, P. Chinn, K. Thorburn, R. Kimura, C. Wong, W. Dang Jr., P. Hellreich, M. Shirasu, P. Kim, J. Betwee, H. Percy, T. Smith, C. Kam, R. Stodd, E. Bade, G. McKenna, T. Crane, R. Kwon, G. Sugino, J. Kamaka III, B. Lee Loy, J. Berthiaume, M. Cooper, C. Gulbrandsen, J. Lewin, C. Miura, D. Canete, T. Au, S. Kemble, R. Marvit, D. Parsa, R. Sy, E. Baysa, J. Frohlich, V. Jobe, R. Hicks, T. Reppun, D. Char, W. McKenzie, E. Gramlich, M. Hefley, and R. Hollison; guests Joseph Painter MD, AMA President; Joseph Hatch MD, AMPAC Board member; Robert Wah MD, Chair of the AMA Young Physicians Section; David Cloud, AMA Field Representative, and Jay Keese, AMPAC staff, Washington, DC. HMA staff present were J. Won, N. Jones, R. Kendro, L. Tong, J. Asato, J. Estioko, N. Kamiya, J. Kawamoto, D. Matsunaga, and N. Okazaki.

Following the opening of the House of Delegates at 1:30 pm on Friday, October 15 by the Speaker of the House, Leonard Howard, a moment of silence was observed in memory of the 15 colleagues who have died since 1992: Edgar S. Childs, Andre Choan, Donald S. Depp, Keiichi Goshi, Edwin Kam, Richard K.C. Lee, Walter Loo, Arthur Neilson Jr., Randall Nishijima, Alexander C. Peat, David Sears, A. Leslie Vasconcellos, T. Robert White, David E. Wood, and Samuel Yee.

All of the committee reports were referred to three reference committees held throughout Friday afternoon.

At the installation banquet on Saturday evening, Dr Painter swore in the new president, Andrew Don MD. The A. H. Robins Physician of the Year Award was presented to Honolulu dermatologist Norman Goldstein MD for his work in educating the community to "Practice Safe Sun." The annual awards for Legislators of the Year were announced: Robert Bunda, House of Representatives and Donna Ikeda, Hawaii State Senate. Susan Foo, new president of the HMA Alliance, was introduced.

Reports adopted with recommendations requiring follow-up included: The report of the Treasurer and Finance Committee which approved the budget for 1994 with dues set at $600, the same as 1993; established dues of $100 for retired and life members; continued a waiver of dues for residents and medical students; continued the 5-year phase-in program for young physicians entering medical practice. The subscription rate for *Hawaii Medical Journal* will be included in dues.

Minor recommended changes to the HMA Bylaws were approved. Dr Norman Goldstein was appointed editor of the *Hawaii Medical Journal.* Reports relating to Hawaii Tumor Registry were referred to the Cancer Commission for a report to HMA Council. The Native Hawaiian Health Committee will consider an annual seminar on Native Hawaiian Health in memory of George Hi'ilani Mills MD.

Resolution 16 was filed resolving that physicians promptly transfer a patient's medical records to the physician designated on a properly signed authorization to ensure continuity of care.

Resolution 2 concerning regulation of toxic pest control chemicals was referred to the Environmental Health Committee. Resolution 11 relating to the lack of nursing-home beds was referred to the Long-term Care Committee. Resolution 20 calling for the HMA Scientific program to include a half-day session on disaster preparedness was referred to the Scientific Program Committee.

Resolutions adopted by the delegates included the following:

Resolution 1 resolved that HMA recognize the responsibility and key role of providers to effectively collect and analyze data and disseminate information in order to contain costs and continuously

➤ *Continued on page 23*

Persistent Postoperative Ventricular Tachycardia Treatment by Using External Cardiopulmonary Support

Bassam A. Hamid MD, Steven S. Azuma MD, Robert A. Hong MD, Jeffrey M. Lau MD

Drug-resistant incessant ventricular tachycardia (DRIVT) after cardiac surgery is a rare but almost always fatal event. Antiarrhythmic therapy seems to be ineffective and electrical cardioversion is of limited value when these patients present themselves with recurrent, sustained ventricular tachycardia. A patient with DRIVT in whom external cardiopulmonary support finally succeeded in bringing about resuscitation will be described in this article. The use of external cardiopulmonary support (CPS) should be considered in patients with this kind of malignant arrhythmia.

Introduction

Ventricular arrhythmia is common after cardiac surgery; however, in the majority of cases, postoperative ventricular arrhythmia is easily managed with antiarrhythmic medications. In rare instances, DRIVT occurs after cardiac surgery; however, in most patients, DRIVT results in sudden cardiac death from arrhythmia. External cardiopulmonary support previously has been described as being effective in the treatment of these patients.[1] A patient with postoperative DRIVT in whom external CPS was used successfully to resuscitate him when he went into cardiogenic shock and developed pulmonary edema is reported in this article. The use of CPS allowed the patient to stabilize and permanent effective antiarrhythmic therapy was initiated.

Case presentation

A 71-year-old man was admitted to the hospital with a history of chest pain, orthopnea and paroxysmal nocturnal dyspnea for several months. The electrocardiogram (EKG) revealed sinus rhythm with frequent ventricular premature contractions, QT duration of 0.36 msec, right bundle branch block and left anterior fascicular block. There was no evidence of old or recent myocardial infarction. Acute myocardial infarction was ruled out by testing for normal serial cardiac enzymes and by the absence of new EKG changes.

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Cardiac catheterization was performed and the left ventriculogram revealed anterolateral hypokinesis and an ejection fraction of 40%. Coronary angiography demonstrated a 50% stenosis of the main left coronary artery and occlusion of the distal left circumflex coronary artery.

Surgery was performed with placement of a sequential saphenous venous graft from the aorta to the first and second obtuse marginal coronary arteries and to the first diagnonal branch. A second sequential saphenous venous graft was placed into the left anterior descending and the distal left circumflex arteries.

The patient's immediate postoperative course was uncomplicated; however, on the second postoperative day, following extubation, the patient developed acute respiratory distress. Arterial blood gases on 3 liters per minute of oxygen by nasal cannula showed pO2 of 69.9 mm of Hg and O2 saturation of 94.8%; the chest x-ray revealed a 20% to 30% right apical pneumothorax. A chest tube thoracotomy was performed with subsequent resolution of the pneumothorax. A chest tube thoracotomy was performed with subsequent resolution of the pneumothorax. Frequent ventricular depolarizations were noted on the monitor and the patient then developed sustained ventricular tachycardia.

The patient was cardioverted into sinus rhythm with 200 J and was reintubated; 75 mg of Lidocaine was given intravenously and the maintenance dose was increased from 2 mg per minute to 3 mg per minute. Nevertheless, ventricular tachycardia recurred. The patient was given a total of 1725 mg of Procainamide HCL intravenously, a total of 250 mg of Bretylium Tosylate intravenously, a total of 0.75 mg of Digoxin intravenously and 7 separate cardioversions for ventricular tachycardia and atrial fibrillation with rapid ventricular response of 200. Despite all these measures, ventricular tachycardia persisted and the patient remained hypotensive with systolic blood pressures between 40 and 80; also he was chronically hypoxemic with O2 saturation of 70% on 100% oxygen.

In an attempt to salvage the circulatory collapse and improve oxygenation, external cardiopulmonary support was initiated using percutaneous access through the right femoral artery and vein. Cardiopulmonary support with a blood flow of 3.5 L/min was established with resolution of hypoxemia and hypotension.

Thereafter, amiodarone HCL was given through a nasogastric tube at a dose of 2000 mg a day. The patient improved and CPS

was terminated after 6 hours. No recurrent ventricular tachycardia ensued. The patient was extubated and placed on a regimen of decreasing doses of amiodarone. When he was discharged from the hospital, he had no further ventricular tachycardia.

Six months after surgery, amiodarone was discontinued. Electrophysiologic studies performed at 7 months post-op failed to induce ventricular tachycardia. He was monitored after antiarrhythmics were discontinued, and at 18 months the patient was doing well and was free of clinical arrhythmias.

Discussion

Arrhythmias occur frequently in patients after cardiac surgery.[2] These postoperative arrhythmias range from benign to being potentially life-threatening. Supraventricular arrhythmias are common in the postoperative phase. Atrial fibrillation has been documented to occur in up to 30% of patients who undergo heart surgery and is postulated as being caused by postoperative pericardial inflammation and associated atrial irritability.[2]

Sustained ventricular arrhythmias are much less common. Postoperative ventricular tachycardia has been reported in patients with antecedent histories of ventricular arrhythmia. Ventricular tachycardia in these patients probably is precipitated by postoperative metabolic abnormalities such as hypokalemia and hypomagnesemia, or by excessive circulating catecholamines, changes in ventricular wall stress and hypoxemia. In most patients, postoperative ventricular arrhythmias are not life-threatening, often are self-limiting, and usually are responsive to antiarrhythmic treatment. DRIVT is rare, almost uniformly fatal and the development of alternate therapies for this condition is crucial.[2]

We have described a patient in whom external CPS was used to accomplish successful resuscitation, although the mechanism by which CPS did this is conjectural. We postulate that it resulted in improved oxygenation, improved myocardial perfusion and hemodynamic stabilization; therefore, that possibly decreased catecholamine stress and allowed suppression of incessant ventricular tachycardia that had previously not responded to antiarrhythmic therapy. Incessant ventricular tachycardia and associated pulmonary edema had prevented adequate oxygenation. Cardioversion and ventricular pacing were of limited value in this patient despite temporary successful cardioversion.

Transient control of the arrhythmia is essential because the incessant ventricular arrhythmia could be only temporary. Arrhythmogenesis in the postoperative patient might be the result of a variety of insults that will be self-limiting. The fact that we were able to withdraw our patient from antiarrhythmic therapy 6 months after surgery supports this concept.

Experiences with the use of external cardiopulmonary support in patients with postoperative ventricular tachycardia have been limited. O'Neill and colleagues have described a patient in whom CPS resulted in termination of incessant ventricular tachycardia.[1]

The authors postulated that CPS allowed for a decrease in left ventricular wall tension that resulted in a decrease in ventricular arrhythmogenesis. This concept is supported by San Fellipo[3] who described effective termination of intractable ventricular tachycardia by using an intra-aortic counterpulsation catheter. Irrespective of the mechanism of action, the recognition of potential for the successful treatment of incessant ventricular tachycardia with external cardiopulmonary support is crucial.

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Retinopathy of Prematurity: Incidence and Severity in Hawaii

John H. Drouilhet MD, Susan Pelke RN, Donald Sroat MD
Malcolm Ing MD, Byron Wong MD, Gregg Kokame MD and David Easa MD

Because survival of low birth-weight infants requiring intensive care has improved recently, particularly since the advent of exogenous surfactant therapy, we reviewed our experience at Kapiolani Medical Center for Women and Children (KMCWC) from 1989 to1991 to determine if the incidence of retinopathy of prematurity (ROP), a serious long-term complication, had also increased. During this 3-year period, threshold disease, the ROP stage in which cryosurgery is recommended, occurred only in infants ≤1000 grams. Seventy-four infants ≤1000 grams were diagnosed with ROP of any stage. Sixteen eyes (9 infants) reached threshold; 14 were treated with cryosurgery. Six of these eyes have useful vision on follow up; 8 do not. Exogenous surfactant therapy had no significant effect on ROP incidence or severity in our series. Although ROP incidence did not increase during this review period, it remains a serious problem in high-risk premature infants in our Newborn Intensive Care Unit.

Introduction

Retinopathy of prematurity (ROP), a disorder of altered retinal vasculature occurring frequently in low birth-weight infants requiring neonatal intensive care, can result in visual disability or permanent blindness. This condition is thought to be unpreventable, although it has been found to be related to 2 major factors: Birth weight and the duration of oxygen exposure.[1,2,3,4,5] Retinal vasculature changes occur over time and can progress through a sequence of stages leading to permanent blindness. During this progression, the retinal vasculature reaches a threshold at which point the disorder might be amenable to surgical intervention, indicating the need for frequent and repeated ophthalmologic evaluations.[5,6]

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Nationally, the survival of infants requiring neonatal intensive care has improved over the last decade;[7,8,9] this also is true for infants treated in Hawaii.[9,10] Newer treatments, such as exogenous surfactant therapy for the most common, serious pulmonary disorder of prematurity, Respiratory Distress Syndrome (RDS), have contributed significantly to this improved survival.[11] As a result, the number of infants surviving with birth weights <1000 grams and gestational ages <26 weeks has increased. This study questioned whether improved survival of low birth-weight infants would be accompanied by a higher incidence of long-term complications such as ROP.

Accordingly, this is a retrospective review of KMCWC's recent experience with infants who developed ROP in the first 3 years after exogenous surfactant therapy was initiated in the Newborn Intensive Care Unit (NICU). This study focused on infants ≤1000 grams birth weight, since these tiniest infants have the highest risk of death and disability.

Materials and methods

Retrospectively the charts were reviewed of infants with a diagnosis of ROP who were discharged from the NICU between January 1, 1989 and December 31, 1991. Demographic information, including birth weight, gestational age, days in oxygen, days on mechanical ventilation and surfactant treatment was collected.

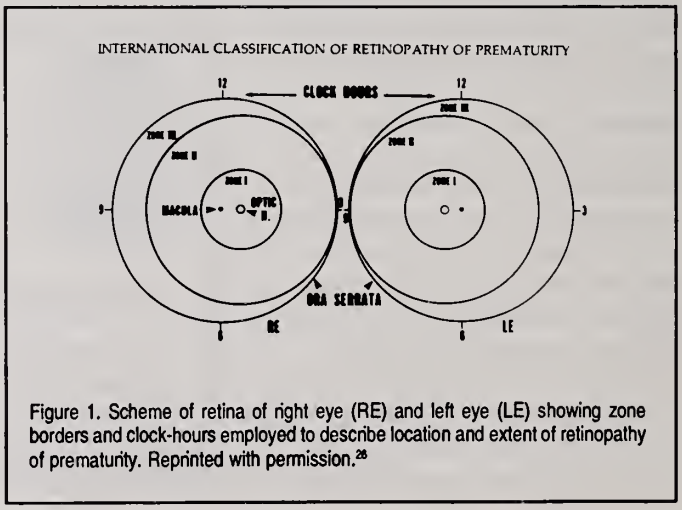


Figure 1. Scheme of retina of right eye (RE) and left eye (LE) showing zone borders and clock-hours employed to describe location and extent of retinopathy of prematurity. Reprinted with permission.[26]

ROP Classification: ROP was defined according to the International Classification of Retinopathy of Prematurity, which has standardized the anatomic evaluation of the disorder. This classification describes the abnormalities of retinal development based on location, extent of the disease and staging.[12]

ROP is reported as being located in Zone I, Zone II, and Zone III. During gestation, normal retinal vasculature grows from the optic disc outward to the periphery of the retina anteriorly in the eye. Zone I describes a radius extending from the optic nerve to twice the distance of the disc to the center of the macula. Zone II extends in a radius from the optic disc to the nasal ora serrata and temporally to the equatorial area. Zone III includes the area anterior to Zone II extending to the ora serrata temporally (Figure 1). The extent of the disease is expressed in clock-hours of involvement. These clock-hours are described as the observer looks at that eye.

Staging of the disease ranks the severity of abnormal vasculature from Stages I to V. Stage I involves a flat white demarcation line separating vascularized from avascular retina with abnormal branching of retinal vessels. In Stage II, the line becomes a ridge and extends away from the retinal surface. The ridge contains extraretinal fibrovascular proliferation into the vitreous in Stage III (Figure 2); this criterion is necessary to define threshold disease when considering cryosurgery. Stage IV is retinal detachment as the result of exudates or traction; Stage IV-a describes no macular involvement, while Stage IV-b includes macular detachment. Stage V is total retinal detachment.

Plus disease designates increasing dilation and tortuosity of the retinal vessels with vessel engorgement in the iris, poor pupillary dilation and vitreous haze (Figure 3).

Threshold disease is defined as Stage III Plus disease in Zone II with greater than 5 contiguous or 8 noncontiguous hours of extraretinal fibrovascular proliferation. Zone I with Plus disease is also considered threshold for treatment with cryosurgery.

Analysis of Data: Our data were analyzed for normality of distribution with the goodness-of-fit test. Normally distributed groups were compared for significance using the student's t-test; the Mann-Whitney test was used for non-normally distributed groups. Chi square analysis was used to test proportional data; a p value of <0.05 was considered significant. Values are expressed as means ± standard error.

Results

There were 1,288 admissions during the review period. Four infants were excluded from the review because they were transferred from other facilities and their records were not complete. Another infant was deleted from the analysis involving surfactant because it was unknown whether or not she had received surfactant during the extended follow-up required.

From 1989 to 1991, 87% of all NICU admissions had birth weights >1000 grams* and 88% of these survived.** Thirty (3%) of these infants developed ROP. This group of larger ROP infants had a mean birth weight of 1326±64 grams; 83% weighed <1500 grams. Mean gestational age was 29±0.4 weeks; only 3 infants were >31 weeks old. Stage III pre-threshold was the most severe stage reached; this developed in only 3 eyes. No eyes reached threshold or required cryosurgery.

In the group of infants 1000 grams, 167 were admitted* during this 3-year period; 119 survived to discharge.** Of these surviving infants, 74 (62%) were diagnosed as having ROP. The incidence rate remained stable during the review period, ranging between 60% to 64% in each of the 3 years that were studied.

The severity of ROP was related inversely to birth weight; threshold or greater stages were found only in infants ≤1000 grams. The exceptions were the 2 surviving infants with birth weights <500 grams born during this period. Although both had mild ROP, neither reached threshold level. Overall, of the 74 infants ≤1000 grams with ROP, 16 eyes (9 infants) reached threshold level and 14 eyes were treated with cryosurgery; the parents declined bilateral cryosurgery in each of twins. Demographic data for this group of infants included mean birth weight of 775±14 grams and gestational age of 26.3±0.2 weeks. They required oxygen for 76±4 days and ventilator therapy for 37±3 days. The only deaths in this ROP group during this 3-year period occurred in 3 infants who weighed <750 grams.

Sixty-one of the above infants with ROP also received surfactant therapy for RDS during this 3-year period; 48 of these were

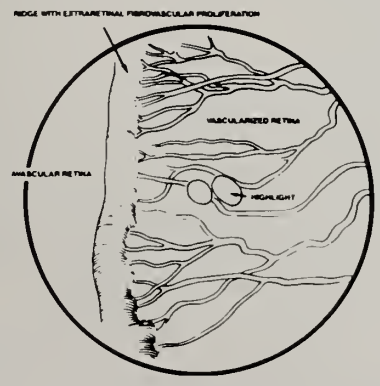


Figure 2. Line drawing of extraretinal fibrovascular proliferative tissue of Stage III. Reprinted with permission.[26]



Figure 3. Line drawing of extraretinal fibrovascular proliferation of amounts of tissue judged to be characteristic of severe Stage III. Reprinted with permission.[26]

≤1000 grams. There were various inclusion and exclusion criteria for surfactant administration, although most infants with documented RDS received surfactant therapy, leaving no untreated controls. Nevertheless, our review found 25 infants ≤1000 grams who did not meet the criteria for being given surfactant and were similar in many respects to the surfactant-treated infants. This non-surfactant group was comprised of infants with mean birth weight of 780±30 grams and mean gestational age of 26.2±0.3 weeks who required 77±11 days in oxygen and 39±8 days on mechanical ventilation. None of these parameters was significantly different from their surfactant-treated counterparts.

The number of eyes reaching threshold level was similar between the surfactant–(n=9) and non-surfactant–(n=7) treated infants ≤1000 grams. Seven eyes in each group required treatment with cryosurgery. There were 3 deaths in the non-surfactant group, but none in the surfactant group ($p = 0.01$).

The outcome of the 14 eyes treated with cryosurgery was determined by follow-up of 1 to 4 years. Of the 14 eyes undergoing cryosurgery, 6 eyes have useful vision and 8 eyes have no functional vision. Of the 8 eyes with no useful vision, 6 were attributed to retinal detachment, 1 to a significant macular fold and 1 to severe temporal dragging of the macula. Only one of the 6 eyes with useful vision had a normal appearance. The other 5 had mild temporal dragging of the vessels and/or macula. Five of the 9 infants treated with cryosurgery had received surfactant. Seven eyes were treated in these 5 infants; 3 eyes (43%) have no useful vision. Of the 4 infants not receiving surfactant, 7 eyes had cryosurgery but 4 (57%) have no useful vision.

Discussion

This retrospective review demonstrated that 62% of NICU survivors with birth weights ≤1000 grams had ROP. The results suggest the incidence of ROP, including the percent of infants reaching threshold or worse, is similar to reports from other neonatal intensive care units in this country[1,5,13] and around the world.[2]

Our results further indicate that exogenous surfactant therapy did not have any significant effect on the incidence of ROP or on its severity in this small series. This conclusion is based on a comparison between a group of infants receiving exogenous surfactant therapy and a similar group not treated with surfactant. While these untreated infants cannot be considered controls, the groups were nevertheless similar enough to allow for this conclusion. Our data is in agreement with a general consensus from other studies reporting the incidence of ROP in various large surfactant trials.[14,15,16,17,18,19,20,21] However, Repka et al retrospectively reviewed 112 low birth-weight infants receiving prophylactic surfactant treatment with Infrasurf and demonstrated that such therapy was associated with a decreased incidence of ROP.[22]

Available published follow-up data from surfactant-treated infants 1 and 2 years later are so far anecdotal and inconclusive. A review of 1,450 infants at one year of age indicated that the incidence of visual deficits (41 compared with 36) and blindness (13 compared with 12) was only slightly increased in control infants compared to those treated with surfactant.[23] In a series of 35 infants at 14 months adjusted age, Ferrara et al found 2 treated infants and 1 control infant who were blind as a result of ROP.[24] In another review[25] at 2 years of age, 2 of 39 surfactant-treated infants were blind while none of 33 controls were blind.

Although our small cohort makes it difficult to draw significant conclusions, we have demonstrated that retinopathy of prematurity continues to be a serious problem in high-risk premature infants requiring NICU care at KMCWC. Infants with serious ROP were those ≤1000 grams. Sixty-two percent of survivors in this weight group had ROP; 12% of these infants (11% of affected eyes) had threshold disease. Forty-three percent of the eyes of infants undergoing cryosurgery could fix and follow; the others had no useful vision. Exogenous surfactant therapy did not have an impact on the incidence or on the severity of ROP in our cohort.

Although the pathogenesis of ROP is poorly understood, a number of multicenter clinical trials currently are underway to determine the value of various new therapeutic interventions applying both oxygen and light in order to determine the potential benefit in reducing the incidence of ROP.

Footnotes
* 31 infants admitted in 1989 were excluded because medical records not accessible.
** 1 additional infant of unknown birth weight died and was excluded.

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Ethnic Differences in the Recurrence of Adenomatous Polyps after Colonoscopic Polypectomy

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A retrospective study was done of polyp recurrence rates following an initial clearing colonoscopy for adenomatous polyps. The intent of the study was to identify risk factors that would predict a greater risk for recurrence in Hawaii's ethnically diverse population. When the initial exam detected multiple polyps, a higher recurrence rate was found in Caucasian patients.

Introduction

Following an initial colonoscopy and removal of all identified polyps, the recurrence rate of adenomatous polyps has been reported to be 50%. Risk factors for recurrence include atypia and multiple polyps at the time of the index exam.[1,2,3] Because there are no data pertaining to the effects of ethnicity and risk of polyp recurrence, the ethnic diversity of the Hawaii population creates an ideal place to study this relationship. Of particular interest were the differences between Hawaii Japanese and Hawaii Caucasians; previous studies had suggested that residents of Hawaii who are Japanese have higher rates of colon cancer than do Caucasians.[4,5] The purpose of this study was to investigate the relationship between ethnicity, other patient demographics, index polyp features, and the recurrence of adenomas at the time of a follow-up colonoscopy.

Materials and Methods

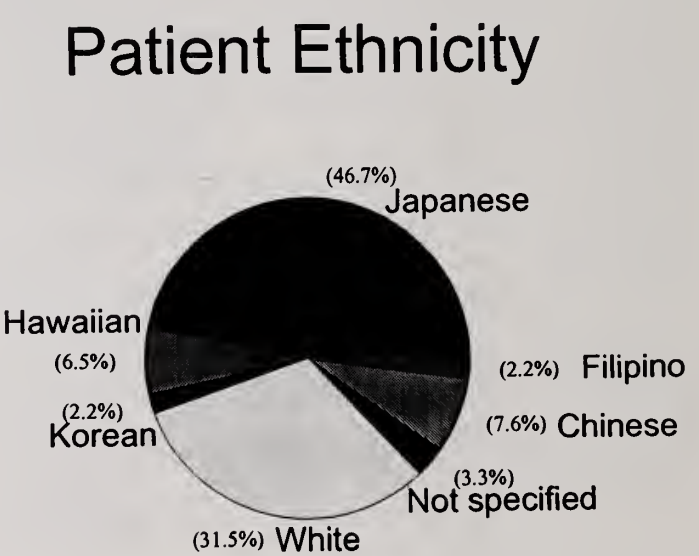
The Straub Clinic is a 150–physician multispecialty group located in Honolulu, Hawaii. Patients at Straub Clinic are encouraged by their primary physician to undergo screening with a flexible sigmoidoscopy as recommended by the American Cancer Society for colon cancer prevention.

The examination is performed by a nurse in Straub's Ano-Rectal Clinic, and in all cases, when a polyp is identified with flexible sigmoidoscopy, the patient is advised of the results of the screening and then referred directly to the gastroenterology department for colonoscopy or to the primary physician, who then is advised to refer the patient to gastroenterology. Colonoscopies and polypectomies are performed by board–certified gastroenterologists.

For morning procedures, patients are prepped with a commercial polyethylene glycol lavage solution administered the night before or the morning of the exam for afternoon procedures. Intravenous sedation with meperidine and midazolam or diazepam is administered during procedures.

The examinations are conducted with an Olympus fiberoptic or video colonoscope. Polypectomy is performed using the electrocautery snare whenever possible; polyps less than 5 mm and not snared were either cold-biopsied followed by monopolar fulgaration of the polyp base, or removed with hot biopsy forceps. Occasionally cold biopsy without subsequent cautery was used. Data from the flexible sigmoidoscopies and colonoscopies are kept on a computerized data base.

The names of 342 patients identified with at least one polyp by flexible sigmoidoscopy screening at Straub's Ano-Rectal Clinic from 1987 to 1990 were taken from the computerized log.



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Demographic, colonoscopic and histologic information was abstracted to a data collection sheet from the patient's chart and the computerized data base. If the patient had a follow-up colonoscopy to the cecum less than 2 years after the index examination, further data were abstracted to a second data sheet. Of the 342 patients identified with polyps at screening, 93 patients did not choose to proceed with a colonoscopy examination. Of the 249 patients who had a full colonoscopy, 48 patients did not have an adenoma at the index. Of the 201 patients who have at least one adenoma or carcinoma at the index, 84 patients did not return for a follow-up, 21 had a follow-up colonoscopy not to the cecum, 4 had a follow-up 2 or more years after their index exam; the remaining 92 qualified for this study. The mean interval between the first and second colonoscopies was 13 months.

The following statistics were employed to assess the significance of factors associated with finding at least one adenoma at the follow-up colonoscopy: Student's t-test (for continuous variables), Pearson's chi-square (for discrete variables), Fisher's exact test (when cells contained fewer than 5 observations), and Mantel-Haenszel chi-square. Chi-square was calculated using Yates' continuity correction for 2x2 contingency tables. Relative risk and 95% Taylor-confidence limits on the relative risk were calculated to determine the effect of index atypia on subsequent development of recurrent adenoma. Odds ratios and 95% confidence intervals on the odds ratio using the approximation method of Cornfield were calculated in addition to the Mantel-Haenszel chi-square to measure the effect of ethnicity on the development of adenoma at follow-up while controlling for the number of index adenomas.

Results

Eight patients (3 Japanese, 3 Hawaiian, 1 Filipino, and 1 Caucasian) were found to have a carcinoma at the time of the index examination. The numbers were too small to detect an effect of ethnicity on the prevalence of colon carcinoma. There

Table 1 Clinical Features and Recurrence of Adenomatous Polyps

	No Rucurrence N=51	Recurrence N=41	p value
Mean age (S.D.; range)	63 (s.d. 39-82)	66 (s.d. 43-86)	0.16
Sex ratio	33:18 (M:F)	30:11 (M:F)	0.52
Patients with largest adenoma >1cm at index exam	25/51 (49%)	21/41 (51%)	1
Family history of colon carcinoma	6/51 (12%)	5/41 (12%)	1
Atypia at index exam	16/51 (31%)	11/41 (27%)	0.81
More than one polyp at index exam	21/51 (41%)	33/41 (80%)	0.0002

Table 2 Ethnicity and the Risk of Recurrence of Adenomatous Polyps

Ethnicity		No Recurrence	Recurrence
Japanese	(N=43)	27 (64%)	16 (36%)
Caucasian	(N=29)	12 (41%)	17 (59%)
Chinese	(N= 7)	5 (71%)	2 (29%)
Hawaiian	(N= 6)	3 (50%)	3 (50%)
Korean	(N= 2)	1 (50%)	1 (50%)
Unspecified	(N= 3)	2 (67%)	1 (33%)
Total		51	41

p=.180

Table 3 Findings at Index Colonoscopy In Japanese and Caucasian Patients

	Japanese N=43	Caucasian N=27
Percent of population who are male*	65%	66%
Mean age*	64 years	65 years
Percent of polyps with atypia*	30%	27%
Percent of polyps proximal to the splenic flexure*	38%	25%
Mean number of adenomas*	2.56	2.35

*p>.05

Table 4 Risk of Recurrent Adenomatous Polyps Japanese versus Caucasian

	Japanese N=43		Caucasian N=27	
Number of adenomas at index	recurrence	no recurrence	recurrence	no recurrence
One	0	14	7	8
More than one	16	13	10	4

Mantel-Haenszel Chi-square=5.289 df=1
Two-tailed p=.021
Odds ratio=4.684 Cornfield's 95% confidence limits: 1.228 and 19.344

were 2 cases of Duke's stage A, 2 cases of Duke's stage B carcinoma and 4 cases of carcinoma in situ; these patients were included in the study. The ethnic distribution of the study population is shown in Figure 1.

The recurrence rate for adenomatous polyps found at a one-year follow-up colonoscopy in the entire population was 44.6%. Polyps found at follow-up were smaller: 77.3% of polyps found with follow-up were less than or equal to 0.5 cm compared to 56% at the index exam ($p = .0018$).

When the whole group was studied, age, sex, size of the polyp at the index exam, family history of colon cancer, and ethnicity did not identify patients at increased risk for adenoma during follow-up (Tables 1 and 2). A relationship was not detected between the location of the polyps upon index exam and the location of those found at follow-up.

In contrast, a strong relationship was noted between the number of adenomas found during the index exam and detection of an adenoma during follow-up. Of the patients who initially had only one adenoma, 21.1% had an adenoma when followed up; 61.1% of those with more than one polyp initally had an adenoma at follow-up (Table 1, $p = .0002$).

A relationship existed between the presence of polyps with atypia at the index and the presence of atypia at follow-up. Of the 65 patients with no atypia at the index, 3.1% had atypical polyps at the follow-up. Of the 27 patients with one or more polyps with atypia at the index, 22.7% had polyps with atypia at the follow-up (Relative risk 7.2, 95% confidence intervals 1.1 to 32.0, Fisher's exact test, $p = 0.021$).

Japanese and Caucasian patients, the two largest ethnic groups, were then studied separately. There were no differences in the incidence of atypia, location of polyps, age, sex ratio, or number of polyps during the index exam in these 2 groups (Table 3). Although there was a trend toward more right-sided polyps in Japanese patients, the trend was not significant.

Surprisingly, there was a difference in the risk of recurrence in the 2 groups. The risk of a recurrent adenoma was 4.684 times greater in the Caucasian group than in the Japanese after controlling for the number of polyps at the index exam (Table 4).

Discussion

Because two-thirds of the initial population were excluded for reasons detailed in the paper and the numbers were relatively small, this study was limited; however, in many respects the findings were consistent with those of others. The recurrence rate of polyps at one year follow-up was 44.6%, close to the 50% rate reported in the literature. It also was noted that multiple polyps at the index exam were associated with a higher-than-expected recurrence rate. In contrast, the relationship between ethnicity and the polyp recurrence rate has not been documented previously.

Polyps found at one year follow-up could have been missed at the first exam as opposed to newly developed polyps. Two previous studies reported approximately 15% of polyps were missed by colonoscopy.[6,7] Thus the recurrence rate at one year represents a mixture of new polyps and missed polyps. Japanese and Caucasian patients had similar numbers of polyps at the index exam, but fewer Japanese patients had polyps at the time of the follow-up examination. This suggests that either the miss rate during the first colonoscopy was lower or the regrowth rate of adenomas was lower in the Japanese population. A lower miss rate might be explained by differences in the quality of the preparation of the colon on the first exam between the 2 populations; however, because equal numbers of polyps in Caucasian and Japanese patients were found on the initial exam, a higher find rate in Japanese patients would mean they had fewer polyps than Caucasian patients to begin with. This seems unlikely given autopsy data from Hawaii showing that the frequency of adenomatous polyps in Hawaii Japanese is equal to or greater than that of Caucasians.[8] If the lower incidence of polyps at follow-up represents a lower regrowth rate in Japanese patients, the findings might be explained if our Japanese patients modified their life-style to a greater degree than did Caucasian patients after becoming aware they harbored adenomatous polyps.

Calcium, nonsteroidal anti-inflammatory drugs, dietary fiber and other environmental agents could have an effect on the risk of developing adenomatous polyps. Although Straub does not have a formal program to discuss diet alteration for patients with newly found adenomas, gastroenterologists frequently mention the possibility that a high-fiber diet could decrease the risk of colon cancer. Perhaps dietary fiber or exposure to other environmental agents was different in the Japanese patients compared to Caucasian patients in the year between the first and second colonoscopy. Unfortunately the retrospective nature of this study does not allow for this issue to be addressed.

The finding that Hawaii Japanese could be at lower risk for recurrent polyps is particularly interesting in light of previous reports that Hawaii Japanese paradoxically have more right-sided polyps than Caucasians but more left-sided colon carcinoma.[5,8] The findings of this study add weight to the idea that there are ethnic differences in the development of adenomas and colorectal carcinoma, and that the biological trigger for adenoma growth could be different from that which takes an adenoma to carcinoma.

Conclusions

This study suggests that ethnic differences exist in the regrowth of adenomatous polyps after an initial colonoscopy and clearing polypectomy, specifically Japanese patients are less likely than Caucasian patients to have polyps present at the time of a one-year follow-up colonoscopy. In Hawaii's population, it appears that Japanese patients with a single adenomatous polyp without atypia are at particular low risk for recurrence one year following a clearing colonoscopy.

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Blood Transfusion: The Risks and Benefits

Julia A. Frohlich MD

As greater attention is focused on medical and legal risks of the transfusion process, physicians ordering a blood transfusion must advise their patients thoroughly and clearly of the potential risks involved. Physicians must explain clearly to patients that a zero-risk blood supply is impossible to achieve; patients must understand that all necessary steps practicable have been taken to ensure the safest possible supply.

Introduction

Blood transfusion is not a perfectly safe procedure; however, neither is omitting transfusion for a patient at risk of dying of anemia or bleeding.[1]

A statement issued at the National Institutes of Health Consensus Development Conference in June 1988 made this observation: "Transfusion is a lifesaving measure in the management of a variety of medical and surgical conditions...For many patients, homologous red cell transfusion carries great benefits, permitting surgical procedures that would not otherwise be possible, and allowing medical therapies for patients who are or may become anemic."[2]

In her article "Explaining Benefits of Transfusion," Linda Stehling MD states, "The physician must ask, 'What is the goal of therapy?'...The goal must be to benefit the patient in some way. The alternatives must also be considered."[3]

Since several alternatives to transfusion are available, the patient should be given an explanation of both the positive and negative aspects of each as it relates to his or her particular situation.

Three techniques are involved in blood conservation: Reduction of blood loss both during surgery and for diagnostic purposes; minimizing transfusion of blood and components, accomplished by hemodilution; and autologous blood transfusion.

Risks of transfusion transmitted disease

According to Roger Y. Dodd PhD, American Red Cross Holland Laboratories, "The safety of the blood supply continues to increase, not only as a result of major innovations such as the elimination of paid donations [in the 1970s] and the introduction of new tests [in the 1980s], but also because of incremental improvements in test sensitivity and refinements in the process of education donors and assessing their qualifications."[4]

President, Blood Bank of Hawaii

Submitted for publication: December 21, 1992

Areas of concern in transfusion

Risk associated with transfusion can be either immediate or long-term and includes both immunologic and infectious disease consequences. Areas of particular concern that the physician should discuss with the patient are:

- Hemolytic transfusion reactions ranging from fever and chills to death.
- Transmission of infectious diseases such as hepatitis or AIDS.
- Febrile reactions causing temporary increase in body temperature.
- Immune problems ranging from urticaria to breathing difficulties or, on rare occasions, donor inability to accept homologous blood without becoming ill.

Transfusion risk projection

Many reports in medical literature now available assess the risk of transmission of infectious diseases by blood transfusion, in particular HIV. The projection of risk usually has been determined in one of 3 ways:

- Actual cases of transfusion–transmitted AIDS (since mid-1985, when the test for HIV was applied to all donated blood).
- Reports from investigative techniques such as polymerase chain reaction (PCR) and viral cultures of tested donor blood.
- Studies projecting probable risks of infection based on epidemiologic models.

Actual case studies

In a six-year study of transfusion-transmitted hepatitis C in cardiac surgery patients, as reported in the *New England Journal of Medicine*, investigators at Johns Hopkins, Baylor, and St. Lukes in Houston found the incidence to have decreased markedly (84%) since implementation of hepatitis C virus testing in May 1990.[5]

The authors estimated the risk of transfusion-transmitted hepatitis C at 3 per 10,000 units transfused, based on finding 3 seroconversions in 552 patients who received 9,916 units of blood that had been tested and were negative by the first generation HCV test. The risk is lower now with the improved sensitivity of the second generation test for HCV which has been in use by all U.S. blood banks since March 1992.

In the same study (reported completely in the *Annals of Internal Medicine*, October 1, 1992) the risks of transfusion-transmitted HIV-1 and HIV-1/2 from screened blood were found

to be about one in 60,000 units transfused. A total of 11,532 surgery patients were followed at the 3 institutions to determine the incidence of transfusion-transmitted disease. These patients had received 120,301 units of blood or blood components and 2 of the patients were infected with HIV-1, for a risk of approximately 1 in 60,000 units of blood. The authors felt the current risk of transfusion-transmitted AIDS from blood that had tested negative for HIV is probably lower today because of improved sensitivity of the tests now in use, coupled with more effective exclusion of high risk donors. Both infected patients had been transfused prior to 1990. The seroconversion for HTLV-I/II was 1 in 69,272 units.

Another report of AIDS transmission from blood screened negative for antibody to HIV is found in the *New England Journal of Medicine* (May 28, 1992). The authors, from the Centers for Disease Control, describe results of investigating 158 reports that CDC had received of patients with transfusion-transmitted AIDS from negatively screened blood. [6]

In this investigation, 98 patients had completed follow-up, 14 other cases had information that removed them from the study (eg, transfusion in a foreign country) and 47 cases are still open for further investigation. Of the 98 patients with a completed follow-up, only 15 had actually been exposed to HIV through the receipt of blood from donors who initially tested negative for HIV antibody and were later confirmed to be infected with HIV.

To date, no cases of transfusion-transmitted AIDS from blood tested for HIV have been reported in Hawaii.

Investigative techniques

Another way to determine risk of transfusion-transmitted HIV is to culture peripheral blood mononuclear cells and perform genetic amplification with PCR in fully screened HIV-negative blood donors, seeking evidence of HIV.

In a report published in *New England Journal of Medicine* (July 4, 1991) from the University of California-San Francisco and the Irwin Memorial Blood Center, HIV was found in one of 76,500 donations that underwent culture and PCR in a 2-year period (November 1987 to December 1989). According to the authors, "Given the similarity between the rate of HIV-I seropositive donations in San Francisco to date (0.01%) and the rates in most other cities around the country, the risk we observed is probably comparable to that in other major metropolitan areas. It is noteworthy that our estimate lies within the confidence intervals of recent projections based on epidemiological models, as well as within the confidence intervals of a prospective follow-up study of recipients of screened blood. Collectively these results put into perspective the low risk of HIV-I transmission by transfusion of fully screened blood." [7]

Epidemiologic model studies

Dodd notes that an analysis of data on the infectivity of the last seronegative blood donation from donors who subsequently became positive suggests that the infectious-window period for HIV is about 45 days and that the overall risk of infection is one in 225,000 units. He compares this figure to higher estimates of one in 60,000 based on isolation of HIV of seroconversion of recipients in locations where the prevalence of HIV is relatively high. Based on surveillance studies and efficiency of laboratory tests, he estimates the frequency of transfusion-transmitted hepatitis B at one in 200,000 units. [4]

Other rare infections, such as Yersinia enterocolitica, malaria, Babesia microti, and Trypanosoma cruzi, are reported rarely in the United States, with a risk of less than one in 1 million units. One author, Ira A. Shulman MD, notes that only 5 cases of transmission of such parasitic infections have occurred in one year in the United States out of more than 12 million units of blood collected and transfused.[8]

Noninfectious adverse reactions to blood transfusion and their reported frequency are: Fever/chills, 1-in-50 to 1-in-100; urticaria, 1-in-100; hemolytic transfusion reaction, 1 in 6,000; fatal hemolytic transfusion reaction, 1 in 100,000. [9]

Autologous donation—an overview

In the quest for maximum safety in blood transfusion, a strong case exists for encouraging autologous donation as the optimal transfusion alternative. A recipient who serves as his or her own donor receives the safest possible transfusion in that the risks of transfusion-transmitted infection and alloimmunization are eliminated. Patients who donate their own blood for use in their own elective surgery reduce their risk for immune reactions and infectious diseases associated with allogeneic transfusion.[10]

The Blood Bank of Hawaii has been providing autologous donation as a service to Hawaii patients since the 1970s and currently performs more than 100 procedures annually. A patient's blood is not drawn if the Blood Bank's medical director determines the procedure has potential to cause harm to the patient.

Other health care institutions that provide autologous donation service include The Queen's Medical Center, Kaiser Permanente Medical Center, Kuakini Medical Center, St. Francis Medical Center, Maui Memorial Hospital, and Hilo Hospital. The number of procedures performed by these institutions ranges from more than 700 to fewer than 50 annually depending on hospital size and need.

Eligibility criteria

In general, a patient healthy enough to undergo a planned surgical procedure usually can tolerate phlebotomy. The patient must have a minimal hemoglobin level of 11 g/dl or a hematocrit of 34%, and the frequency of donation can be no more than every 4 days to allow for equilibration of plasma volume. It is best to collect blood as far in advance of the intended date of surgery as possible to allow the patient's hematocrit to return to pre-donation levels, and patients are deferred from donating if any of the following conditions exists:

- Severe hypertension
- Cardiac symptoms such as angina or arrhythmia
- Severe aortic stenosis
- Recent myocardial infarction or active cardiac failure
- Active infection
- Positive test for HIV or HBsAg.

Benefits of autologous donation

According to Robert L. Thurer MD and Margot S. Kruskall MD in "Alternatives to Random-Donor Transfusion," "Autolo-

gous donation can have very important benefits in the appropriate patient population, since exposure to homologous blood usually can be reduced or eliminated. A second effect, possibly advantageous and deserving more study, is a higher hematocrit during surgery and hospitalization, due partly to the erythropoietic stimulus of phlebotomy and partly to the greater likelihood that red cells will be given if autologous units are available."[11]

Benefits of autologous transfusion for the donor-patient are numerous, and a physician should explain clearly to the patient that this procedure:

- Eliminates transmission of infectious disease
- Eliminates risk of alloimmunization to erythrocyte, leukocyte, platelet or protein antigens
- Eliminates risk of hemolytic, febrile or allergic reactions due to alloantibodies
- Eliminates risk of graft-versus-host reactions
- Stimulates erythropoiesis by repeated preoperative phlebotomy
- Reduces the quantity of homologous blood used in a given procedure.

Risks of autologous donation

The drawbacks to autologous donation are limited and for the most part of minor significance:

- Potential exists for presurgical anemia or hypovolemia[12]
- Potential exists for human error and mix-up of blood units prior to transfusion.

Additionally, according to Thurer and Kruskall, "Collecting and transfusing autologous blood is unnecessary and inappropriate for those surgical procedures that seldom require transfusion. Medical facilities and fiscal resources are strained when patients donate autologous blood that will not be used."[13]

"The most important option [for the physician] is to do everything possible to make transfusion unnecessary, to eliminate the transfusion experience...The first question to be considered for any patient is, 'Is the transfusion necessary?'"[11]

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improve quality and work with others to initiate a statewide health information system.

Resolution 3 relating to health care access and a cost containment medical savings account resolved that the HMA join Texas Medical Association and other state medical associations to support and encourage legislation that would provide individuals with the option to choose higher deductible health insurance policies and utilize personal medical savings accounts as an alternative to managed competition.

Resolution 6 directed HMA to notify the State and City and County of Honolulu that a properly located and properly designed convention center capable of hosting large medical meetings is an urgent need and should be funded immediately.

Resolution 7 asked the HMA to convene a meeting of the Healthcare Association of Hawaii and Hawaii Health Information Managers Association to determine whether a system can be developed to allow release of information in emergency situations and to suggest proposed legislation if necessary.

Resolution 17 noted with appreciation the services given by Steve Lent and Crossroads Press, who will discontinue publishing the *Hawaii Medical Journal* at the end of 1993, and to express sincere gratitude for a job well done over the last 12 years.

Resolution 6 reaffirmed the action of the HMA Council to continue publishing the *Hawaii Medical Journal* managed by HMA staff with contracted printing and advertising services.

Resolution 18 reaffirmed its existing policy of peer review for members only.

Resolution 8 asked the HMA to meet with the Department of Personnel Services to discuss concerns regarding state-employed physicians.

Resolution 9 resolved that HMA seek legislation that will increase protection for those physicians who provide care without expectation of remuneration as long as the services are provided in good faith and meet the standard of care.

Resolution 10 asked that HMA do everything possible to define the tasks delegated to physician extenders by their supervising physician.

Resolution 12 resolved that HMA support legislation to establish the legal limits for driving under the influence of alcohol to 0.05 mg/dl.

Resolution 13 resolved that appropriate legislation be introduced to the Hawaii State Legislature to ensure that the following principles are maintained:

1. Physicians have the right to choose the method of practice: fee-for-service, salary, capitation;

2. Physicians be able to charge their patients the fair and usual fee regardless of insurance or coverage arrangements, recognizing a physician's responsibility to provide adequate information on his or her fees to patients;

3. Physicians' clinical judgments are to be subject to professional peer review;

4. Physicians participating in any insurance program or health care system are to have clear definitions of controls on their fees and an external source for arbitration of disputes on fees and other matters; and

5. Physicians shall have the ability to negotiate collectively on behalf of their patients, or the right to select an organization to negotiate on their and their patients' behalf, in all public and private health care insurance programs and plans.

In Resolution 14 relating to the Clinton Health Care Plan, it was resolved that HMA urge that the patient be given the opportunity to choose the health insurance plan of his or her choice.

Resolution 15 directed the HMA Peer Review Committee to explore avenues to ensure that all physicians are adequately peer reviewed and report their findings to Council in four months.

Resolution 18 commended Dr Fred Reppun for his service as editor of *Hawaii Medical Journal.*

Resolution 21 directed the HMA Council and leadership to be involved in pursuing possible options for physicians, such as the development of an independent physician network that could serve as an economic negotiating unit for physicians in order to preserve the doctor-patient relationship and allow both patients and physicians the freedom of choice.

A Memorial Resolution was passed honoring Dr Richard K.C. Lee and recognizing the contributions made by Dr Lee toward improved public health.

In discussion of new business, the following policy was adopted: The HMA opposes the use of nonphysician health care providers in the role of gatekeeper that would deny direct access to physicians of the patient's choice.

Report of the Elections

Officers elected: Andrew Don, President; Frederick Holschuh, President-elect; Carl Lehman, 1-year term as Secretary; Calvin Kam, AMA Delegate; Andrew Don, Allan Kunimoto, Frederick Holschuh, Alternate AMA Delegates; Leonard Howard, Speaker of the House; Patricia Blanchette, Vice-Speaker; Jon Betwee, Councilor-Maui; Theresa Smith, Councilor-West Hawaii; Craig Kadooka, Councilor-Hawaii; Peter Kim-Councilor-Kauai; Danelo Canete, Patricia Chinn, Robert Hollison, Roger Kimura, Kim Thorburn, Calvin Wong-Councilors from Honolulu; Thomas Au, Ronald Peroff, Antonio Tan, Donn Tokairin to the HMA Peer Review Committee. The Nominating Committee was elected as follows: Gerald McKenna, Kauai; Jon Betwee, Maui; Ernest Bade, Hawaii; Robert Young, West Hawaii; Virgil Jobe, Patricia Chinn, Jeanette Chang, Terry Vernoy, Thomas Au of Honolulu.

Sports Awards

Golf: Dr Elliot Tomomitsu was the overall low net.

Tennis: Division B, Katherine Don for Women; Clyde Shimotsu for Men. Division C, Donna Park for Women; Gregory Park for Men.

Exhibit Prize Drawing: R. Kuszmider MD received the grand prize; Keith Myers MD received first place and Virgil Jobe MD received second place.

A complete copy of all resolutions, reports of committees and commissions and the proceedings of the House of Delegates are on file in the HMA office.

News and Notes Henry Yokoyama MD

Life in these parts

British physician **Malcolm Carruthers** has opened a clinic here for the treatment of *viropause* (male menopause) with testosterone shots and implants. Seventy-five men have gone to the Hormonal Healthcare Center for treatment and several have reported marked improvement in their lives. Honolulu medics are not entirely sold on the concept. **Walter Strode,** Straub urologist commented: "Mainstream urologists would feel that it fringes on the unorthodox." **Stephen Chinn,** president of the Hawaii Urological Society says, "There may be a syndrome called male menopause, but it is still controversial."

ER physician **Shay Bintliff** heads Hawaii's "Blow the Whistle on Violence" program. Honolulu police are inviting women who walk, jog or work early or late hours to pick up a free whistle at any police station. The first batch of 5,000 whistles was donated by GTE Mobilnet.

Potpourri

A teacher asked her 4th grader, "What do you want to be?" Little Johnny, "I want to be a stripper." Teacher: "A stripper?" "Yeah, I want to be a stripper and refinisher like my dad." (**Paul Harvey** on KHVH on August 8)

A sister testifying in court on behalf of her brother who was being charged with assault and battery while under the influence: "Your Honor, we are all alcoholics. We are a tight family." (Another **Paul Harvey** news item)

Oops! Our slip is showing

A KHVH announcer reported: "When prescription drugs become over-the-counter drugs, they become 30% cheaper, eg, Naprosyn, Tagamet and *Xanax*." We hope he meant Zantac!

One psychiatrist met another and greeted him with: "You're fine; how am I?" (Assimov laughs again)

Mr. Burns told his family doctor that he wanted a vasectomy. "This is quite serious," said the doctor. "Have you talked it over with your wife?" "Oh, yes," said Burns. "She agrees with me." "And your children?" "Yes, sir," said Burns. "The kids are in favor of it—17 to 3." ("Laughter, The Best Medicine," *Readers Digest*, October 1993)

Professional moves

July: Urologist **Masaru Koike** retired and his patients were referred to **Terry Q. C. Yee** and **Thomas Ito** at KMP, Suite 612.

August: Orthopod **Calvin Oishi** opened his offices at Kapiolani Medical Center–Pali Momi, Suite 300 and Queen's POB I, Suite 608; Cardiologist **Edward Shen** opened his offices at Queen's POB I, Suite 701 and St. Francis MOB, Suite 101; Allergist **Jeffrey Kam** joined Hawaii Asthma Allergy Associates at Aiea Medical Bldg., Suite 107; Pediatrician **Galen Chock** relocated to Queen's POB I, Suite 501; Cardiologist **Samuel Dacanay** joined **Masahiro Mori** and **William Dang, Jr.** at Queen's POB II, Suite 409, Kapiolani Medical Center–Pali Momi, Suite 200 and Wahiawa General Hospital Kilani Clinic. The Portner Orthopedic Rehabilitation added physicians **L. Anita Cone** and **Denise Parnell.** The Central Medical Clinic at Kuakini Medical Plaza added pediatrician **Derrick Kida** and Ob-Gyn **Jenny Nakama.**

September: Ophthalmologist **Christopher Mai** opened his Island Eye Center at Aiea Medical Bldg., Suite 601; pediatric ophthalmologist **Peggy Liao** located at Kapiolani Medical Center, Suite 1140; and general surgeon **Robert Oishi** relocated to Kuakini Medical Plaza, Suite 305; hematologist-oncologist **Kaye Kuwahara** joined **Kenneth Sumida** and **Gordon Nakano** at Kuakini Medical Plaza, Suite 412 and Queen's POB II, Suite 107; and internist **Daniel Tamashiro** joined the Medical Arts Clinic in Wahiawa, 382 California Ave., Suite 106 and Mililani, 95-1249 Mahula Parkway B-100.

Belated news with our apologies

In April, pediatrician **Harold Nekonishi** retired from active practice. In March, Ob-Gyn **Jon Morikawa** joined **Keijiro Yazawa** at Kapiolani Medical Center POB, Suite 940. Cardiologist **Hiro Makino** opened his offices at Pali Momi Medical Tower, Room 635 and Kilani Clinic, 850 Kilani Ave., Wahiawa. In May, ophthalmologist **Robert Lee, Jr.** opened a branch office at Pearlridge Shopping Center, Phase II.

Sports

Golfer: "What's your handicap?" Second golfer: "Honesty." (From *Readers Digest*, October 1993)

Modest golfer **Clive Otsuka** had a hot streak going. He has won a pair of TVs in 2 back-to-back golf tournaments: Diagnostic Lab and Kapiolani Medical Center tournaments.

Retired surgeon and avid golfer **Yasuyuki Fukushima** made his first hole-in-one on August 27 on the 11th hole at Mid Pac CC using his trusty 3 wood. Witnesses were **Garth Morimoto, Roy Iritani** and **Henry Yokoyama.**

Physicians speak up

Eye man **John Corboy** says: "Not all sunglasses are created equal." The fastest growing cause of blindness among American adults is ARD (Aging retina disease) caused by overexposure to UV rays in youth. John recommends UV–blocking sunglasses.

Richard Warsnick, principal investigator for the Hawaii Osteoporosis Center is seeking healthy women for an international study of menopause. Eligible women must be postmenopausal and between the ages of 45 and 80. The study, called EPIC (Early Postmenopausal Interventional Cohort), is sponsored by a major American pharmaceutical company and will test a class of drugs known as bisphosphonates (a nonhormonal, nonestrogen agent that affects only bones).

Paul Gebauer, retired thoracic surgeon and researcher was awarded the *Honolulu Star–Bulletin* Golden Letter Award for June. Paul had written, "If Kevorkian succeeds in changing society's attitude about the need for legal, compassionate euthanasia, he will have done more for American society than any other medic in the 20th century. Euthanasia means easy death. It must be a deliberate, but gentle act." Paul feels that state legislation should make euthanasia an option in cases of brain death or widespread malignancy. Legalizing assisted death will fulfill the wishes of countless patients in nursing homes and other institutions. It will save thousands of families the depletion of their life savings spent for the maintenance of dear ones in vegetative states. Re Kevorkian Paul says, "He's got more guts than anyone in the world."

Tidbits

A February *JAMA* article reports that a study of men ages 21 to 55 who were severely bald at the top revealed that they were 3 times more likely to have heart attacks then those with full heads of hair. The study sponsored by **Upjohn Co.** also showed that men with mild to moderate baldness had a 1.5 times greater risk.

Senior White House official, **Ira Magaziner,** who is directing the Health System Reform Task Force says, "We need to get the lawyers out of the doctor-patient relationship." The health care planners are weighing dramatic changes in medical malpractice laws including barring lawsuits against individual physicians. Under a theory called "enterprise liability" the health plan would be sued instead of doctors and hospitals. Other changes might include caps on damages and encouraging patients and providers to resolve disputes without going to court.

William Mercer Co., an actuarial and employee benefits firm, reported that salaried physicians with hospitals, HMOs and group practices received $139,732 in 1992. The survey was based on data from 112 health care

organizations covering 8,500 physicians nationwide. The AMA reported last year that the average self-employed nonfederal physician earned $185,600 in 1990.

Miscellany

The physician complained to St. Peter about his living quarters. "Why does the attorney who arrived with me have such luxurious quarters? I've worked hard and honestly all my life." St. Peter explained, "Well, he's the first lawyer we've had in such a long while." (As told by **Randall Schmitt** at **Randall Nishijima's** funeral June 22, 1993, explaining that Randy would have enjoyed the joke.)

An attractive girl enjoying an early dawn walk along the beach was surprised to hear a frog talking to her. "Hello there, lovely lady! Kiss me and I will turn into a wealthy surgeon who will marry you and give you everything you want." "Will you be young and handsome as well?" "Yes, I will become a young, handsome surgeon." "Well, let me think." She thought a minute, then bent down and kissed the frog. But before he could transform, she picked him up and thrust him into her jacket pocket. A jogger who had witnessed the drama asked, "Why did you do that?" She explained, "Well, these days, with the Clinton health plan and all, a doctor? Nah! But a talking frog—he's worth something." (As told by psychiatrist **K. Y. Lum** who admitted to writing a humor column in his college days.)

Honored, elected and appointed

Psychiatrist **Darius Amjadi** was awarded the biennial QMC *Ke Kauka Po'okela* Award in February. **Herbert Uemura,** director of laboratories was awarded the first Kapiolani Medical Center's Outstanding Physician Award in March. Kauai internist **Peter Kim** was named Home Care Physician of the Year at the annual meeting of the Hawaii Association for Home Care. **Julia Frohlich,** president of the Blood Bank of Hawaii, was named chair of the Chamber of Commerce of Hawaii. Julia is a director of First Hawaiian Inc. and of First Hawaiian Bank and past chair of the Board of Regents of University of Hawaii. Honolulu cardiologist **Jack Scaff** has been founder and director of the Honolulu Marathon Clinic for the past 19 years. Jack, nationally recognized as a pioneer in cardiac rehabilitation, has helped found the Great Aloha Run and serves as a volunteer race director. He served 7 years as president of Honolulu Marathon Association and plays Santa Claus in the popular Jingle Bell Run at Christmas time.

Obituaries in brief

Edwin Kam, 89, retired Kailua urologist died April 6. **Samuel Lim Yee,** 84, retired general surgeon died June 4. **Eugene Mitchell Lance,** 59, orthopedic surgeon died June 7. **Andre Bernard Choan,** retired Kaiser pediatrician died August 4.

Conference notes

"Cost-Effective Management of Patients with Arthritis." Visiting professor **James McCuire** from Stanford spoke in the Kam Auditorium on September 29.

Recent data on rheumatoid arthritis indicates: 1. RA is a/c premature death. 2. The longer the duration, the greater the crippling. 3. Genetics a/c greater severity. One-sixth chance of developing RA if gene present. 4. Education is protective. 5. Estrogen relation: Women ages 15 to 25 who are on birth control pills have sixfold protection from RA; pregnancy causes remission of RA.

RA is a more aggressive disease than formerly thought. Primary physicians should be taught to detect RA earlier.

Incidence in U.S.: Osteoarthritis=50,000 cases; rheumatoid arthritis 5,000 cases. Age 40 20/1 ratio of osteo/RA.

The earlier the treatment, the better the prognosis.

Dr has been historically taught that: 1. RA is symmetrical; 2. Rheumatoid Factor 90% positive; 3. X-rays show bony erosions.

Primary physicians will find that early RA is asymmetrical; that RF will be negative; that there will be no bony erosions as it takes 2 to 3 years to develop.

Take home message: Detect earlier and treat aggressively.

Treatment of RA: Increasing toxicity with progression of RA 1. Motrin; 2. Proprionic acid (Naprosyn, Daypro); 3. Plaquenil; 4. MTX (in 6 mos.).

RA involves PIP and MCP joints, not DIP joints.

New therapies: OA treated with NSAIDs, which do not stop progression). Knees require total replacement.

Steroid systemic effects: 1. Infection risk; 2. Sed rate drops with long-acting steroids; 3. Serum cortisol suppression with ACTH; 4. Complications from systemic steroids:

Infections	39.9%
GI bleed	20.1%
Fractures	19.6%
Cataracts	15.5%
Osteonecrosis	1.3%
Endocrine	1.0%

RA therapy at Stanford: Drugs: 1. Daypro 2. Naprosyn 3. Generic Motrin 4. Plaquenil. Least GI effects: 1. Motrin 2. Naprosyn 3. Daypro 4. Voltaren 5. Relafen.

Disalcid: No antiplatelet effects; can cause deafness; never use in OA.

Cheapest NSAID: generic Motrin 800 mg 4 times a day.

MTX: Check patient q 6 to 8 weeks; repeat lab tests for liver and renal toxicity.

Diagnostic tests for RA: ANA is for SLE; 96% of SLE have positive ANA; once positive for ANA, repeating titers useless. Repeating ANA and RF does not correlate with progress. X-rays of hand: Too little bone = RA; too much bone = OA.

Ddx OA: 1. RF 2. Sed rate 3. X-rays. Cost-effective management of OA: 1. Tylenol reduces only pain 2. NSAIDs are mainstay; still progresses because of more joint use.

Conference notes

"Clinical Significance and Biochemistry of Lp-a." Lecture on November 12 at Kam Auditorium by **Claude Lardinosis,** VP from University of Nevada School of Medicine.

General discussion: LP(a) is a genetic trait; comprised by 2 polypeptides: apo-a and apo-b-100 LDL; is associated with greater incidence of CHD and CVA when greater than 20 mg/dl. LP(a) levels are related to production differences; 12% of the population have high levels of LP(a).

Factors Influencing LP(a) levels:

a) Hormonal control: Estrogens and androgens lower LP(a) levels.

b) Obesity: Wt. loss lowers LP(a) levels.

c) Age and gender: Lp(a) increases between ages 20 to 59 and decreases after 60. Lp(a) is higher in postmenopausal women. Men and women have similar levels.

d) Dietary fats have no effect except that trans-fatty acids raise Lp(a).

e) Lipoproteins: Inversely related to Lp(a) and triglyceride levels.

f) Lipid-lowering drugs: HMG CoA raises Lp(a) levels. Nicotinic acid lowers Lp(a) levels. Others have no effect.

g) Diabetes: IDDM a/c higher Lp(a) levels especially with microalbuminuria. NIDDM when insulin dependent have higher levels.

h) Renal disease: a/c higher Lp(a) levels, but lowered by treating proteinuria.

i) Thyroid disease: Hypothryoidism a/c high Lp(a) and lowered by therapy. Hyperthyroidism a/c low lp(a) and raised by therapy.

j) Alcohol: Cirrhosis a/c low Lp(a). Moderate consumption raises Lp(a). High consumption lowers Lp(a).

k) Smoking: Limited data.

Summary: Lp(a) levels are 90% genetics. Nongenetic factors: Diabetes, renal disease, and hormones.

Excerpts from Dr David Goodman's *Living from Within* life essentials

"Something to do, someone to love and something to hope for are the true essentials of a happy and meaningful life."

"If we appreciate what we have, it always becomes more. If we belittle what we have, it always becomes less. This is probably the most useful law of the human mind."

"We draw to ourselves the good of everything we appreciate, but the evil of everything we belittle."

■

The Weathervane Russell T. Stodd MD

What goes around, comes around—and then some.

The year was 1974 and President Nixon, backed by his HEW Secretary Caspar Weinberger, proposed a medical plan with one standard benefits package for all. However, labor and liberal groups opposed the plan believing that a heavily Democratic Congress following Watergate would pass a more radical plan. That plan failed to materialize. Now, 20 years later, Congress once again is considering a standard benefits basic medical coverage. Will it fly this time—should it? No doubt the AMA will back some basic benefits package, but a clear agreement with the social planners is still some distance away.

A committee is the only life form with 14 stomachs and no brain.

Fourteen of our illustrious leaders in the AAO, the Task Force on Managed Care Strategies, have provided a review to meet the challenge of the managed care planners. Less than optimistic (to put it mildly) our task force forecasts the demise of the solo practitioner, predicts that we all will be forced into networks, and states that *oversupply* will drive out those who are least efficient. Some task force—why not just send the grim reaper and harvest all the independents, those gentle folk who make up the fiber of the Academy? The AAO seems to be promoting the *Dr Kevorkian plan* for fee-for-service members.

She was a professional athlete—of the tongue.

As Congresspersons (especially the Hawaii delegation) rushed to touch the robe of St. Hillary after her health care presentation *(managed coercion),* one has to wonder if there is any thinking or perception in Congress. An additional 37 million Americans will be insured, but the only new tax will be on cigarettes? Yeah, right! Right if every man, woman and child in America will smoke 16 packs a day. The irony in all the hoopla about Clinton's socialized medicine plan is that right now some of the nations cited as prime examples (Germany, Great Britain, and Canada) are moving toward *market–based* solutions and away from government remedies. So far, that fact has been ignored by our planners who seem dedicated to the destruction of all forms of individual medical practice. A true solution does exist, and it is the savings account individual health plan presently in place in Singapore. Not much chance for that program here because it was NIH (not invented here) and does not expand the federal bureaucracy.

If it happened, it must be possible.

Had you invested $10,000 in 1973 in a Dow Jones blue–chip stock, it would have to be worth $33,388 in 1993 simply to keep up with inflation. To mention just a few winners, your 1973 10K in Boeing would be worth $475,000, Merck $144,922, Exxon $201,783, Philip Morris $404,118; however, Sears would be worth $20,665, Bethlehem Steel $11,787, American Express $30,223, and General Motors $30,903.

Reform comes from below. No one with four aces wants a new deal.

A recent study published by Project HOPE revealed that 5% of health care recipients in 1987 used 58% of the nation's health resources. Furthermore, 30% of those resources were allocated to a mere 1% of the patients. Doubtless that 1% will not demand health care *reform* because it is certain that Hillary and her gatekeepers will decide against such profligate expenditures—and that is called rationing, folks.

We all learn by experience, but some of us have to go to summer school.

Your difficult glaucoma patient who frequently misses appointments tells you that the eyedrops burn, that the drug makes his vision worse, and that he has stopped using the medicine. How convenient it would be to just show this noncompliant churl the door! However, do not discharge the patient from care with a simple, "You had better find another doctor." Any patient who is told that you don't want to see him or her again usually becomes furious. He or she might not be able to sue you for malpractice, but he or she can file a claim for abandonment, and you might be hard pressed to defend yourself. No physician should be hesitant to dismiss an uncooperative patient, but do so thoughtfully and carefully. You must send a letter detailing your intent to drop the patient from your practice, allow ample time for him or her to select another doctor, and emphasize that you are terminating the care for the betterment of his or her health. Do not specify or recommend a new physician; however, you can suggest calling the medical society, the hospital roster, or the Yellow Pages. Then document the real reason for dismissal in a separate, confidential memo placed with the patient's chart. Send your discharge letter by registered mail and document the patient's receipt. Our legally managed medical world demands that you protect your backside.

Instant gratification takes too long. It is better to retire too soon than too late.

C. Everett Koop MD, the voluble surgeon general under President Reagan, was turned out of his bully pulpit when President Bush wanted a double minority in that position and appointed Antonia Novello MD.

Wanting very much, if not desperately, to return to the action, Dr Koop has signed on as a supporter of the Clinton medical plan. Previously his posture when expounding on a national plan was more conservative, but now he has adopted the heavily bureaucratic Hillary bill. He was quoted, "...the plan is headed in the right direction." Others might say the direction is a lot more *left* than *right*.

Addenda

▲ On average, the human retina will register 36,000 visual messages an hour and can distinguish 150 different colors.

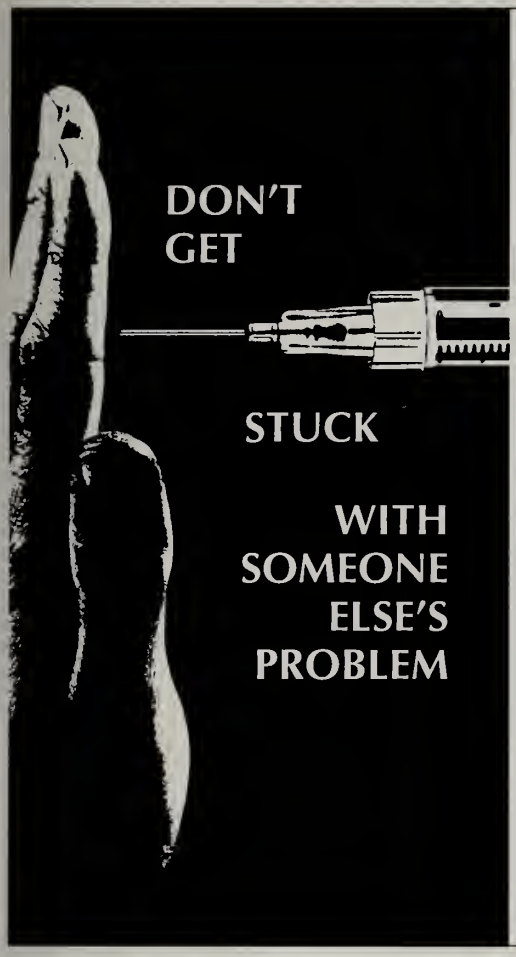
▲ The price of a doctor visit for an established patient rose 85% between 1983 and 1992—$25 to $46. Other goods and services rose by 41% in that time.

▲ There are two times in a man's life when he should not speculate: When he can't afford it—and when he can.

Aloha and keep the faith

rts

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Addendum to **Consent and Privacy in Telemedicine**
December 1993, page 340-341, Norton, SA et al.

Transmission via satellite or by direct link is not secure—that is, others may intentionally or unintentionally gain access to the broadcast. Some centers encrypt their broadcasts even though inadvertently intercepted, non-scrambled transmissions reveal only uninterpretable fragments of data. Furthermore, current federal communications and privacy laws prohibit intentional interception or dissemination of these data. In sum, encryption of electronic data is perhaps analagous to encrypting the hard-copy patient record in that it exceeds reasonable and expected confidentiality precautions.[2]

From Mayo Telemedicine Symposium: Consensus conference on Jurisdictional issues in telemedicine. Rochester, MN October 1 to 3, 1993.

Editorials

We are off and running!

Our new *Journal* format and cover art by **Dietrich Varez** received many favorable comments. Still limited in size because of budgetary restraints, but with prospects of additional new advertisers, we will expand the *Journal* soon.

The Editor regrets some manuscript changes in our Computer Special Issue—changes made without the author's review and approval. The pressure of keeping the *Journal* alive with Crossroads Press and starting a new life with our new printer, Pacific Printers, created some omissions and errors in articles. We omitted Table 1* in the **Clark** and **Berglund** article (p. 346) and we erred in **Norton** et al "Similarly, the consultant must try to use the name of the patient in an attempt to prevent a depersonalized relationship."

Next month, look for a very special issue of the *Journal.* Doctors **Livingston Wong** and **Alan Cheung** will produce an issue on Organ Transplantation in Hawaii.

Norman Goldstein MD, Editor

* For a copy of the table please call the Hawaii Medical Library Reference Department at 536-9302.

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The secret life of John Alfred Burden MD

In July last year, more than 600 Military Intelligence Service (MIS) veterans of WWII gathered in Honolulu for their 50th Anniversary. One of the honorees was 92-year-old **John Alfred Burden MD,** former Maui pineapple plantation physician and former president of the Hawaii Medical Association.

Al was born of missionary parents and raised in Tokyo until age 14. He attended school in California, received his medical degree from Louisville University and took a medical residency at Queens. He had settled on Maui as the plantation doctor for **Baldwin Packers** when Pearl Harbor happened. Al was one of a few in America who had a real mastery of the Japanese language; within a week he had to close his practice and report to a military intelligence language school at The Presidio in California, which had opened a month earlier.

Al led his combat-intelligence teams of nisei interpreters on Guadalcanal and the other Solomon Islands. On a leaflet-dropping mission, enemy fire hit his plane and it crash-landed into the ocean. He suffered a fracture of his cervical vertebrae and was rescued by American troops. The 14th Corps awarded him a Silver Star. On Guadalcanal, Al earned his first Purple Heart when bomb shrapnel hit his arm. He wrote a history of the Battle of Guadalcanal from the Japanese army's viewpoint that he reconstructed from captured documents. For this work, he re-

ceived the Bronze Star. After 14 months in the Solomons, Al was reassigned to Camp Savage in Minnesota where he lectured MIS students on prisoner interrogation techniques.

While at Camp Savage, he was ordered to G-2 Headquarters in Chungking, China where he met **Mao Tse-tung, Chou En-lai** et al, who later became leaders of Communist China. For his work in China, Al received "The Order of Three White Doves" personally presented by **Chiang Kai-shek** and the Legion of Merit from the U.S. Army.

"He was the only *haole* from Hawaii to be accepted for the Presidio military intelligence class. He led the first combat intelligence team on Guadalcanal and in other South Pacific battles. His immense contributions in military intelligence became pivotal influence in convincing American military commanders of the nisei linguists' true value." (Writes Military Intelligence Service historian **Ted Tsukiyama** in the reunion booklet, "Secret Valor.")

As a nisei MIS veteran, I wish to thank Al personally for trusting us at a time when our loyalty was being questioned.

Henry Yokoyama MD

We all thank Dr John Alfred Burden for his service to our country, our territory and state and to the Hawaii Medical Association. So proud of you, Al.

Norman Goldstein MD, Editor

Letter to the Editor

The *Journal* welcomes letters in good taste on any topic. All letters must be signed with the writer's correct signature and include the address and telephone number for our verification. Letters should be on a single subject and no longer than 200 words. Letters of any length may be trimmed.

Send to: Letters to the Editor, Hawaii Medical Journal, 1360 S. Beretania St., Second Floor, Honolulu, HI 96814.

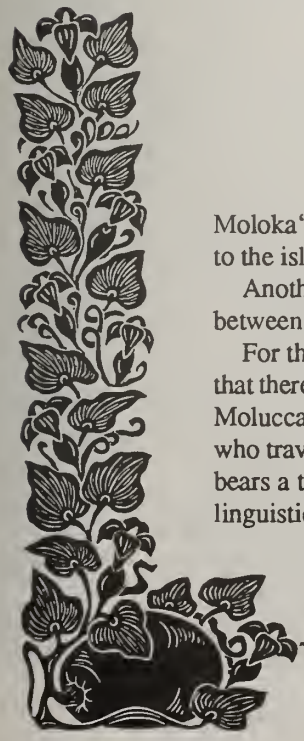
Hillary Rodham Clinton, The White House, Washington

Dear Mrs First Lady:

As I watched Larry King interview you in depth on TV a few weeks ago posing probing questions, particularly on the President's Health Care Reform package, I was much impressed with your grasp of the complex problem this country must face.

Especially did I appreciate your saying that it is very important that the doctor and the patient had to have a relationship of complete trust, one with the other. This is one of the major things that I fear might be destroyed, not only in the President's plan, but also in the many alternatives that are being put forward by the members of Congress as well as by the nongovernmental organizations.

I was also appreciative of what I interpreted in your responses as believing that physicians should be in the front line of figuring out how to take care of people to the best of the competent



Cover art and descriptive text by **Dietrich Varez, Volcano, Hawaii.**
All rights reserved by the artist.

Birth of Moloka'i

Moloka'i island is said to be the child of the goddess *Hina*, *Moloka'i a Hina*. Hina gave birth to the island after her short relationship with *Wakea*, the primal father.

Another less-flattering legend originates the island from an incestuous relationship between Wakea and his daughter, *Ho'ohoku ka lani*.

For those interested in the origin and migratory routes of the Hawaiians, it is of interest that there is a *Morotai* island in the Molucca Islands. Even more intriguing is the fact that the Moluccas were once called the *Sindas* in some parts of the Pacific. Early Spanish navigators who traveled to these spice islands spoke of an island named *Morotoy de los Sindas* which bears a tantalizing similarity to our own *Moloka'i a Hina*. There is some belief that these linguistic similarities hint at a possible migratory trail from Hindustan to Hawaii.

physician's ability and, at a cost that is reasonable and acceptable to both parties, without sacrificing quality in any way. It is up to us physicians to do our part in this: To have a care for the patient's pocketbook equally with the care of his [or her] person.

Of the many approaches to the problem of reform that I have read this past year, I would commend to you and the President the editorial piece by Marcia Angell MD. She is the assistant editor of *The New England Journal of Medicine.* Her analysis of the President's plan appeared in the November 18, 1993 issue, pages 1569 and 1570.

With sincere aloha for your great efforts on behalf of all the people of the United States of America, I am

Respectfully yours,
J. I. Frederick Reppun MD

To the editor:

I feel that HMA has taken a very positive step by encouraging more physicians to recommend smoking cessation programs to their patients. There are many people who are *hooked* on the tobacco habit and by providing smoking cessation programs and information on how and why to stop smoking we will be able to help many overcome their addiction. Hopefully, this will result in better health of all people and lower health care costs to society.

I feel that addicted smokers are similar to alcoholics. They have an addiction which is difficult to break. In my own experience, I have found that when I acknowledged to smokers the *positive effects* of smoking, which include a feeling of well-being, change in mental attitude, either being relaxed or more alert, they are more likely to listen to my talk about stopping smoking or cutting back on their smoking. Acknowledging that they smoke and receive a positive benefit from it puts them more at ease and helps them to feel that they are being understood. Suggestions of what to do rather than smoking also helps. What I find most important is the acknowledgment that probably nothing else will make their brain feel as good as it does when they have smoke in their system. The feeling they get from smoking *fires* them up as nothing else does, and I let them know that I will not be able to offer them a similar substitute. (This is probably the most difficult concept for those of us who are not addicted to understand. The analogy that I use is of a social drinker versus the alcoholic, both get buzzed but the alcoholic craves it and nothing makes him or her feel as good.) I expound on the positive health effects that may accompany smoking cessation. If they are not ready to stop, I ask them to cut down to at most five cigarettes per day. I let them know that if they are able to maintain at this level, there are still risks that are associated with it but less than if they were smoking ten or more cigarettes a day.

I realize that at the present time people are very anti-smoking, however, I am not able to be supportive of an all-out ban on smoking. (I cannot imagine a tobacco harvest taking place as green harvest does for marijuana, and I cannot imagine jailing people for smoking in no-smoking areas.) Approximately 10% to 25% of the American public is hooked on the smoking habit and if this substance isn't available it may create problems that we have not thought through. (Prohibition of alcohol and the problems that accompanied it is an example which comes to mind.)

People have always used mind-altering substances such as alcohol, tobacco, and others, and people will continue to do so in the future. (There is always a possibility that there may even be positive effects of tobacco at low doses as there are with alcohol.)

I feel that our task should be to present a balanced view of the risks of smoking, the reasons people smoke, encourage people not to get addicted, and to avoid smoking if possible. I realize that this leaves the door open to addiction to tobacco but people become addicted to many things such as food, sex, etc.

If what we are really after is an *addiction-free-society* (which I feel is more of an ideal), we must do things to encourage the fulfillment of people's needs as outlined by various people such as Maslow.

In Maslow's view, once the issues of 1. Hunger, 2. Safety (security from attack, freedom from invasion of privacy), and 3. Love and belonging have been addressed and implemented, then people will be able to go on to the next level which is to develop self-esteem and finally, self-actualization (the force for self-fulfillment). If we are able to do this, there is a better chance that addiction to various substances will occur less frequently, and we will have a society in which we will have true mental and physical health and well-being.

I hope this will generate meaningful dialogue, and I look forward to any comments.

The views in this letter are my own and do not necessarily reflect those of my employer nor any group of which I am a member.

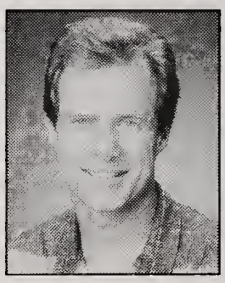
Mahalo nui loa. Malama pono,

Madhup Joshi MD

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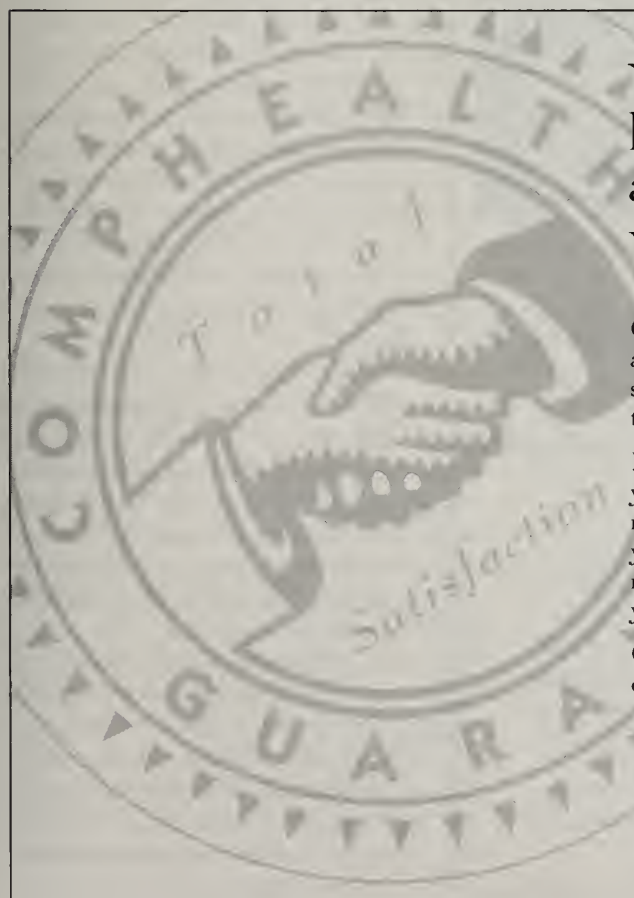
HMA President's Message Andrew Don MD

A statement presented at a briefing for physicians on the Health Security Act on January 15, 1994 in Washington, DC.

The Hawaii Medical Association supports universal coverage and a national package of health benefits that emphasizes preventive care. Any national health care plan must maintain a variety of health plan options with patients having the right of choice. The plan must operate according to the forces of the competitive marketplace while requiring all levels of health care costs to be justified. In addition, insurance reforms must require carriers to insure risk rather than to avoid it.

The Health Care Security Act of 1993 is based on premises we support: Security, simplicity, savings, quality, choice, and responsibility. We strongly believe that all Americans are entitled to quality health care. To that end, we must preserve our right of choice. The right of all Americans to choose their doctors must remain paramount. We must protect the doctor-patient relationship that lies at the heart of quality health care. Only then can we provide every American with true health security.

In the 1960s, some areas of Hawaii still had a system in which primary health care was managed through the plantation system. The plantations, under cost control by management, did not upgrade the medical facilities and services for their plantation employees. Over time, as workers became more and more sophisticated about their own health care, they began to view their medical care through the plantation as inferior to that delivered outside of the plantation. There was a decided shift away from the plantation system as patients looked elsewhere for treatment; they did not feel their particular needs were adequately addressed in this system. This is an example of the failure of a managed care system based on cost control. The present system evolved providing specialized, quality health care while safeguarding the right of patients to choose their own physician. The major health care delivery in Hawaii has been effective in a competitive market even with HMOs such as Kaiser Permanente. In Hawaii, approximately 97% of the population is covered by some form of health care insurance through Medicaid, SHIP (State Health Insurance Plan) covering the gap



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Any plan for effective health care reform to ensure quality care must give patients the opportunity to see physicians outside their plan and authorize individuals to contract for any health services. To preserve quality care, we need to preserve the patient's right to choose his or her own physician and make sure that medical care is not subject to the national health spending budget. We also need to ensure that decisions regarding health care remain within the purview of physicians and other health care providers.

HR 3600 institutes a National Health Board that would oversee the establishment and administration of the new health system. The Board would be responsible for implementing and enforcing national health spending budgets, establishing state plan requirements, monitoring their compliance, reviewing state alliance plans, interpreting and updating benefit packages and setting quality standards. The National Health Board would be responsible for the determination of quality in health care and would not be comprised of any physician providers. The system in effect creates a new federal bureaucracy with price–control authority and control over a national health spending budget.

The Hawaii Medical Association strongly believes that such a system comprised of centralized decision making and artificial spending limits will quickly bring about difficulties in health care access and quality. Such a system as proposed by HR 3600 would result in more bureaucracy, would not effectively address specific state's health care needs and would result in added health costs. HR 3600 would subject health care to global budgets and price controls. Decision making in health care based mainly on economics and not on patients' needs is not in the best interest of the patients and will lead to rationing that cannot address difficulties and inequities in our current health system. We believe that a participatory process that *includes physicians* might be more useful in establishing true goals which can be flexible and are based on patient needs rather than arbitrarily set spending limits or targets.

We are deeply concerned that physicians have not been included specifically in the advisory council that will be responsible for many initiatives and for quality, including the establishment of practice parameters. In order to maintain the highest quality of care, we need to ensure that decisions regarding health care remain within the purview of physicians and other health care providers.

The formation of a national board and regional alliances does not allow each state to better address its specific health care needs. Health care reform must include some flexibility for each state. For Hawaii, the concept of a board in the private sector that includes consumers, insurers, and providers may be more effective to address specific needs while providing quality care in a cost-effective manner.

Meaningful tort reform also needs to be implemented. The cost of practicing *defensive* medicine has added tremendously to the cost of health care. In order to control escalating health care costs, more meaningful tort reform through caps on noneconomic damages and attorneys' fees needs to be instituted.

As the debate on health care continues two considerations must remain paramount: The patients must retain the freedom to choose their own physicians and hospitals; physicians must be able to provide necessary, effective, and efficient care without undue restrictions on their clinical judgment.



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HMA Alliance

Susan L. Foo, President

The Hawaii Medical Association Alliance and the Auxiliary to the Honolulu County Medical Society have been presented with an exciting challenge. We have the opportunity to initiate what will become a $1-million endowment for medical school students in need of financial help to attend the John A. Burns School of Medicine, and to fund invited visiting medical and research professors. This endowment will help make dreams possible by building the prestige of the school, increasing its research capability, and raising the teaching quality and standards offered to the medical students and our community.

Medicine, its future providers, and research money needed to ensure that quality health care doesn't become a victim of health care reform, are in crisis. We are turning to you now in hopes of enlisting your support.

To kick off our endowment celebration, we are proud to sponsor **The Greatest Show in Hawaii,** a first of its kind fund-raiser which will take place in conjunction with the Hawaii Medical Association's established and well-received **Distinguished Medical Reporting Awards Banquet.** At this time we will also recognize a most beloved kama'aina family by honoring Kane and Linda Fernandez, Presidents and CEOs of E.K. Fernandez Shows and Fun Factory respectively. Mr. and Mrs. Fernandez, philanthropists of the highest order, sit on the board of the UH Foundation, the Boys and Girls Clubs of Hawaii, the Variety Club School, the Junior Chamber of Commerce, the Aloha Tower Project, the Young Presidents Organization of Hawaii, and already dispense annual monies to students through the Fun Factory Scholarships project. This year also marks the 90th anniversary of E.K. Fernandez Shows, founded by Kane's father, Edwin Kane Fernandez. What could be a more appropriate commemoration than to raise money that will benefit Hawaii's future physicians—children who have grown up with the fun, fantasy, and excitement that E.K. Fernandez shows, rides, games, and Fun Factories have provided?

The event will take place on Sunday, March 13, 1994 at the Illikai Hotel. Our goal is to raise $100,000 as seed money for the endowment. We propose to do this by having 1,000 or more people attend what shall be a most welcome and unique change to the typical Hawaii fund-raising circuit.

With your help, we can keep the school to a healthy, high quality state of enlightened learning, by greatly broadening our donor base so that we no longer depend on a few benefactors. But much remains to be done—medical student expenses are continuing to sky-rocket, the cost of living in Hawaii is the highest

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in the nation, with the fewest students housing possibilities, professors' salaries are proportionately low, medical research units need to be added, and some of the curricula format and opportunities for visiting professors need to be revitalized.

We are offering special, advanced corporate "platinum" sponsorship for $5,000 per table of ten. Won't you help us take advantage of the endowment challenge and be guaranteed a night to remember? Included in your generous sponsorship will be a free, one-page advertisement in the official **Greatest Show in Hawaii** program. There will also be a private cocktail reception and premium seating. For advanced corporate "gold" sponsorship of $2,500 per table of ten, a one-half page advertisement in the program will be included as well as premium seating. There is also a "silver" sponsorship of $1,000 per table of ten available. In order to have your name appear on the invitation as a special corporate sponsor, please make your check as soon as possible payable to: **AHCMS.** Thank you very much for your consideration and generous contribution. Hope to see you there!!

Paris B. Stevens, President AHCMS

Medical School Hotline

John A. Burns School of Medicine
Satoru Izutsu PhD

At the University of Hawaii John A. Burns School of Medicine (JABSOM), problem-based learning (PBL) is characterized by these unique features:

- Integration of the sciences basic to medicine around actual clinical health care problems (HCPs).
- A three-step process of learning which includes:
 – *problem analysis*
 – the *search* for new knowledge
 – *problem reformulation* or application of the new knowledge to the HCP.
- Small group tutorials (5 to 6 students) with a faculty member who serves as a facilitator or coach rather than the transmitter of knowledge.
- Peer teaching and active student discussion.

The reverse of these axioms is also true. The PBL curriculum no longer has linear courses in the basic sciences, although electives in anatomy, biochemistry, microbiology, physiology and pathology are available to those who desire these experiences. The larger-group, lecture format of teaching is rarely used although students do come together twice a week for clinical-basic science correlation conferences and for colloquia addressing topics that transcend specific HCPs, such as ethics, health delivery systems, and medical-economics.

In the first 2 years, the health care problem has been the focus of the curriculum and incorporates learning issues not only from the biological sciences, but also behavioral issues such as patient reaction to illness and population issues such as risk factors for disease and epidemiology. Clinical skills are learned when they are needed to gather data about patient problems presented in the HCP.

Since it was initiated in Hawaii for the entire entering class of 1989, the PBL curriculum has created controversy among faculty and the practice community. Although several of its features may seem revolutionary to those educated in the traditional medical curriculum, PBL is neither new nor is it experimental. It has been in operation at McMaster University for 25 years and is the curriculum at other schools beyond North America: University of Limburg, in Maastricht, Holland and Newcastle in Australia. Although the educational establishment in the U.S. has been resistant to change, PBL has been adopted as alternate or parallel tracks at Michigan State, Bowman Gray, New Mexico, Rush, Southern Illinois and Mercer and incorporated into existing courses at Kentucky and Tufts. PBL became respectable and the focus of national curricular interest when adopted by Harvard in a modified form in 1987. At JABSOM, the use of PBL extends beyond the first 2 years of medical school into the clinical clerkships. Several departments, including the Departments of Psychiatry and Surgery, continue to use paper cases in order to cover a core series of problems pertinent to their discipline. Others initiate the tutorial and the 3-step learning process by presentation of a real patient worked up by one of the students. Regardless of variation, the test of PBL is the demonstrated mastery by the student of the transfer of learning stimulus from paper problem to real patient.

This transfer to patient-centered learning serves to reassure the school that its graduates:

- Are prepared for the life-long learning needed in an era where current knowledge has a short half-life,
- Are experienced at identifying learning resources, whether from computer-based literature searches, by consultation with experts, or from community resources.

The entering class of 1989 is now the class graduating class of May 1993—Its members demonstrated mastery of these skills!

Alexander S. Anderson MD
Director, Office of Medical Education

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Military Emporiatrics

The United States military maintains high standards of worldwide readiness. Service members can expect duty anywhere from tropical jungles to arctic tundra, and arid deserts to rugged mountains. A major function of military medicine is the health maintenance of service members in such exotic environments. Military health care professionals are proficient in the medical preparation of service members for overseas deployments. These preparations include disease risk assessment; immunizations; malaria chemoprophylaxis; and the prevention of traveler's diarrhea, sexually transmitted diseases, human immunodeficiency virus infection, and hepatitis. Health maintenance preparations also include comprehensive strategies for the prevention of dental disease,

deployment-related injuries, jet lag, weather-related injuries, and high altitude sickness.

This rich body of knowledge and experience in travel-related medicine is known as *emporiatrics* (*emporos* = traveler). The Tripler Army Medical Center Infectious Diseases, Allergy-Immunology, and Preventive Medicine services have combined their interests in emporiatrics to form the International Travelers' Health Clinic. This clinic is available to all active duty military personnel, their dependents, military retirees, and other eligible civilians who are planning or have returned from an overseas trip.

Pre-travel medical advice is provided in this clinic and is tailored to fit the needs and capacities of the individual traveler. The underlying health of the traveler, the travel itinerary, duration of travel, and access to medical care are all important variables to be considered when determining appropriate recommendations for a traveler's health maintenance. This visit should be scheduled at least one month before departure to allow sufficient time to receive any recommended immunizations, initiate malaria chemoprophylaxis, perform any laboratory tests, obtain necessary prescriptions, copy medical records, or acquire other required documents. Travelers with preexisting health conditions should always be evaluated by their primary physician before the trip to ensure that the traveler's health condition does not preclude the planned adventure. The primary physician should provide the traveler with an adequate supply of any special medications or supplies specific to that health condition.

During the pre-travel visit, all travelers receive pamphlets suggesting ideas for the general maintenance of health and hygiene during travel. They also receive a copy of the TRAVAX report for the countries included in their itinerary. TRAVAX, a computerized report from the Travel Health Information Service of Shoreland Medical Marketing, Milwaukee, Wisconsin, contains weekly, updated, official data about each country's immunization requirements and disease assessment as reported by the World Health Organization and the United States Centers for Disease Control and Prevention. It also provides the full text of the United States Department of State Consular Information Sheet and Travel Warnings. The traveler has the opportunity to review this information with the health care provider.

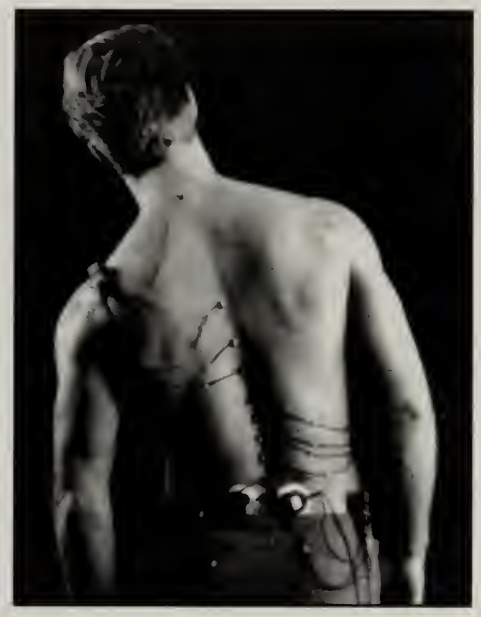
The clinic also offers the post-travel diagnosis and treatment of fever, diarrhea, respiratory symptoms, eosinophilia, and other medical problems that can develop after the return home from a sojourn to a foreign land. Recent examples of some post-travel illnesses seen in the clinic include pneumonia, pulmonary embolism, sinusitis, malaria, dengue fever, amebiasis, strongyloidiasis, shigellosis, giardiasis, Queensland tick typhus, scrub typhus, erlichiosis, nephropathia epidemica, coccidioidomycosis, and sarcosporidiosis.

Many people have repeatedly used Tripler's International Travelers' Health Clinic for pre-travel medical advice. Several people have visited the clinic after returning home to share helpful health maintenance hints they learned during their journey to a particular country so that we could share their advice with other travelers. Interested travelers who are eligible for

➤ *Continued on page 46*

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A Review of the Radiographic Manifestations of Gout

Joseph A. Gagliardi MD, Robert J. Lengyel MD

Hyperuricemia and gout are found in high percentages of the Pacific Island population. As local clinicians and radiologists are more likely to have patients with either the diagnosis or suspicion of gout, a pictorial review of the common radiographic manifestations is presented especially for their information.

Introduction

Gout is a disorder caused by hyperuricemia: Primary is caused by an inborn error of uric acid metabolism, and secondary by an abnormally high rate of uric acid production, incomplete excretion or a combination of both.

Uric acid stones have been recovered from Egyptian mummies dating from about 5000 BC and continue to cause problems in modern medicine today.[1] Hyperuricemia is especially important to physicians in Hawaii because ethnicity plays a role in gout with higher rates reported in the Pacific Islands. Men account for an 8% incidence of gout and women a 1.5% incidence.[2,3] Blacks and certain families have higher rates of gout; some physicians suggest a genetic predisposition may contribute to the pathogenesis of this disease.[4,5]

Case Presentation

Throughout history various etiologies have been postulated regarding gout including anxiety, the passions of one's mind, and a settling of a person's bad humors to the feet.[6]

Primary gout affects men more commonly than women with a ratio of approximately 12 to 1; however, reported rates can vary. The Framingham study reported an incidence in men to be 3.2 per 1,000 and 0.5 per 1,000 in women.[7]

Risk factors associated with hyperuricemia and secondary gout are obesity and alcohol use, which have been linked to higher uric acid clearance. Renal insufficiency, whether secondary to chronic medical disease, hypertension or perhaps lead intoxication can lead to increased uric levels.[4]

Any process that causes an increase in cell turnover in the body, whether malignant or benign such as the hemolytic anemias, can result in a hyperuricemic state and lead to gout.[8]

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The presentation of primary gout usually occurs between 40 and 50 years of age secondary to monosodium urate crystals deposited in articular, periarticular and subcutaneous tissues.

Monoarticular disease classically occurs in the first metatarsal phalangeal joint, although any joint can be affected.

Patients commonly awaken with exruciating pain and swelling. The pain was described by the heroic figure Milton in *Lives of the Poets* by Samuel Johnson as being so intense that "...was he free from the pain of gout, his blindness would be tolerable."[9] Not only is there pain and swelling, but the overlying skin is often discolored to reddish or purple and can progress to ulceration. There is a tendency for gouty attacks to become frequent, to involve more joints, and to last longer.

Early in the course of the disease radiographic evaluation of the affected joints may be completely normal or can demonstrate soft tissue swelling without bone or joint space abnormalities.

Soft tissue and synovial tophi are commonly noted a few years after the first attack. Calcification of the tophi is not common and is seen only after tophi have been present for a long time.[6]

Early on, these tophi cause bone erosion without joint space destruction or surrounding osteoporosis (Figure 1). In Figure 1, a large osteophyte (See arrow in Figure 1) is seen forming along the proximal portion of the erosive change, which is characteristic of gout.

In a retrospective review of 78 randomly selected cases of gout, Martel reports an elevated bone margin that appears to hang over the tophaceous nodule in 40% of cases.[10] This same study shows a predilection for this finding to manifest most commonly in the foot and hand.

The patient in Figure 1 was relatively asymptomatic; significant radiographic abnormalities can be present in patients without any joint pain.[11]

The patient in Figure 2 did not demonstrate the classic metatarsal phalangeal abnormalities in the first digit but instead presented with multiple punched-out erosions at the bases of the second to fifth metatarsals and significant tarsal involvement. There was no associated osteoporosis and the lytic erosions somewhat parallel the long axis of the bone. This parallel appearance has been associated with gouty arthropathy. The joint space is commonly preserved until late in the disease and in this patient, although significant bone erosions have occurred on both sides of multiple joints, the joint spaces are maintained.



Figure 1 Radiograph of the left foot in a middle-aged Samoan man with soft tissue calcified tophus causing erosion at the proximal aspect of the first metatarsal phalangeal joint. Arrow points to an osteophyte beginning to surround the tophus.



Figure 2 Multiple punched-out lesions at the bases of the metatarsals(arrow) without joint space narrowing or surround ing osteoporosis.The tarsal bones are involved (arrow-heads).



Figure 3 Long-standing history of gout in a patient with severe destructive changes in the hand. Carpal and meta-carpal eccentric erosive, destructive changes are present with preservation of surrounding bone mineralization (arrows).



Figure 4 Total joint destruction from an uncalcified soft tissue tophus. It is evident from this radiograph of the right hand that the mass originated adjacent to the third metacarpal and invaded inwardly. The lack of any periosteal reaction suggests a nonaggressive nature.

Figure 3 illustrates the severe carpal and metacarpal destruction that was present in another patient with long-standing gout. Although gout exhibits bare area erosive changes in a proximal distribution, this entity should not be confused with rheumatoid arthritis.

Rheumatoid arthritis commonly presents as a bilateral symmetric process with juxta-articular osteoporosis and is more common in women. Gout however is usually asymmetric and may not be bilateral.

An increase of reported cases of gout has been seen in post-menopausal women. Some reports indicate women comprise 40% of patients in their 70s who present with gout.[12] Multiple factors are thought to contribute to this increase. Women show a rise in serum uric acid levels after menopause, the joints have degenerative changes present which may predispose them to damage from uric acid deposition and many are on diuretic therapy for medical reasons which could further elevate uric acid levels.

Gouty tophi, although located peripherally, can result in total destruction of the adjacent bone or joint space if allowed to progress without treatment (Figure 4).

One man who was recently diagnosed with gout presented with an asymmetric polyarthritis in the lower limbs. A native of the Pacific Islands, he had reported arthralgias waxing and waning for months, always involving multiple joints in the lower extremities.

Gout has been reported to present itself as an acute polyarthritis in as many as 39% of all gout patients evaluated in one study.[13] Sixty percent of these patients had asymmetrical involvement with most affecting the lower extremities.

This patient's radiographs of the feet (Figures 5 and 6) demonstrated not only well-circumscribed erosions at the bases of the third, fourth, and fifth metatarsals (See the black arrows) but also asymmetric, irregular, bony spicules at the sites of muscle and tendon insertions which has been described in gout (See the white arrow).[14] On the lateral projection (Figure 7), these bony spicules or osteophytes are prominent along the anterior and posterior tibiotalar joint space (See arrows). Smaller osteophytes were noticed at the calcaneocuboid joint.

Articular disease in the elbows is present in approximately 30% of patients with gout.[15] Gout should be considered to be a possibility in patients with bilateral or unilateral olecranon bursitis. Figure 8 demonstrates erosive changes both medially and laterally in the distal humerus without surrounding osteoporosis or narrowing of the joint space.

Sacroiliac joint involvement has been reported to occur in 7% to 17% of patients with gout.[16] This same report claimed an increased incidence in sacroiliac involvement in younger patients. Monosodium uric acid deposits cause the typical gouty destruction noted elsewhere that begins along the iliac side of the joint. The hyaline cartilage is thinnest along the iliac side of the joint accounting for the earliest and more severe destructive changes. Sacroiliac involvement can be bilaterally symmetric as in Figure 9, bilaterally asymmetric or unilateral. In this patient the absence of the sharp cortical margin is apparent along the iliac side of the joint when compared to the sacral side (See arrows). This represents sacroiliitis, which in this case was caused by gout.

Erosions in the knees frequently are found along the medial and/or lateral femoral condyles; also the tibia is commonly involved. The joint space may be unaffected; however, since most gout patients are in an older age group, joint space narrowing commonly is present and most likely is due to a combination of degenerative disease and gout.







Figure 5, 6 and 7 Radiographic exam of the ankle and foot in a 28-year old man with gout. The black arrows demonstrate the erosive changes at the metatarsal bases characteristic of gout. The white arrows point to the osteophytes.



Figure 8 AP radiograph of the elbow with medial and lateral erosions in the distal humerus (arrows).



Figure 9 Radiograph of the sacroiliac joints demonstrating irregularity of the iliac side of the joint (black arrow) secondary to erosive changes in this patient with gout. This process is symmetrical. The cortical margin remains sharp without destruction on the sacral portion of the joint (white arrows).



Figure 10 A large erosion is present in the lateral femoral condyle (arrowhead) with smaller erosions present medially (arrows). Note the mild joint space narrowing secondary to degenerative changes.

Cystic changes caused by intraosseous uric acid deposits can appear on the patella; furthermore, chondrocalcinosis and tendon ruptures have been associated with gout.[17]

Gouty erosions are prominent along the lateral aspect of the distal femur (Figure 10) and to a lesser degree medially involving both the femur and tibia. Moderate joint space loss is also present.

Magnetic resonance imaging (MRI) was performed with a 1.5 Tesla General Electric unit in both coronal (Figures 11 and 12) and sagittal planes (Figures 13 and 14). T1 weighted (TR500, TE18) and MPGR (TR517, TE17) weighted sequences were performed (See Figures 11 and 13; Figures 12 and 14, respectively).

Figures 11 and 12 show multiple bare area erosions in the tibia medially and in both femoral condyles (See arrows). An abnormal area of high signal intensity is present below the lateral tibial spine on the MPGR image (Figure 12-arrowhead) consistent with a subchondral cyst. Joint space narrowing is present medially.

The sagittal images in Figures 13 and 14 demonstrate a large subchondral cyst and marginal erosions in the posterior tibial plateaus (Arrows numbered 1). A large joint effusion is also present extending into the suprapatellar bursa (Arrow numbered 2). Although MRI is not advocated or practical for all cases of gout, it can be helpful in evaluating the joint and surrounding soft tissue structures when the patient's symptoms are not explained completely by the physical exam, laboratory results or radiographic exams.

As presented in this article, monosodium uric acid deposition from gout can cause a variety of radiographic abnormalities

throughout the skeletal system. Knowledge of these appearances and of patients with various predispositions for hyperuricemia, such as those of Pacific Island descent, is critical in making a prompt and correct diagnosis.

Acknowledgment

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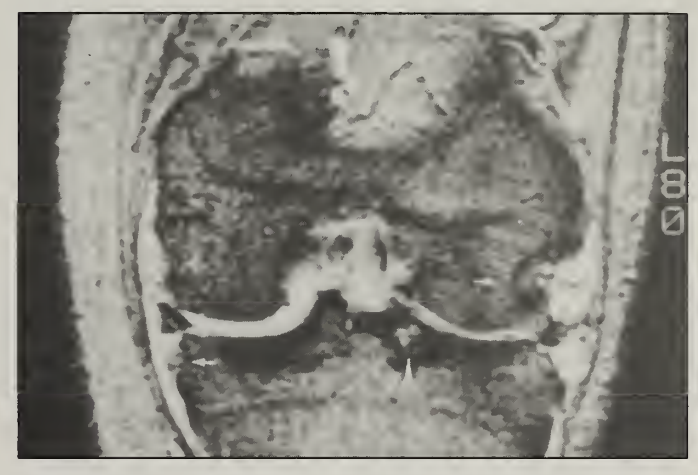


Figure 11 and 12 Coronal T1 and MPGR weighted MR images of the same patient in Figure 10 demonstrate the bare area erosive changes seen in the radiograph (arrows). A large subchondral cyst is identified as areas of abnormal increased signal in the tibial plateaus (arrowhead) on the MPGR image. A moderate joint effusion is present as noted by the high signal within the joint on the MPGR images.





Figure 13 and 14 The sagittal images sharply define the subchondral erosive changes now filled with fluid on both T1 and MPGR weighted images (arrows numbered 1). Arrows numbered 2 demonstrate the patient's joint effusion.

The Immunologic Staging of Chronic Active Hepatitis B Patients in Hawaii

Nathaniel Ching MD*, James Lumeng MD**, Eugene Pon MD++, Clara Y. Ching PhD+

The hepatitis B antigen/antibody levels and natural killer cell activity status of chronic hepatitis B patients identified by the Hawaii State Department of Health were evaluated to select chronically infected hepatitis B patients for interferon therapy and to determine possible immunodeficiencies. The presence of hepatitis Be antigen denotes active replication of the virus. Ninety-five patients were studied: 17/95 (18%) had chronic active hepatitis B, 71/95 (75%) were hepatitis B carriers and 7/95 (7%) had seroconverted. NK activity to the erythroleukemia K562 cell and virus-infected HSV-1 cell of the chronic active and carrier population (P<.05) were lower than that of the control population and those who had spontaneously seroconverted. Of this population 18% were identified with active viral infection and would be candidates for interferon therapy.

Introduction

Infection from the hepatitis B virus (HBV) presents Hawaii with a major public health problem because of its large immigrant population from Asia and the South Pacific. The HBV–carrier rate in Hawaii is estimated at 2% to 3% as compared to the overall U.S. rate of 0.5%.[1]

HBV is a double-stranded DNA virus with 3 different protein antigenic markers: Hepatitis B core antigen (HBcAg), hepatitis B surface antigen (HBsAg), and the core–related antigen, hepatitis Be or (HBeAg).[2] HBsAg is found on the surface or the envelope of HBV. The inner coat, the capsid, is a single core protein surrounding the viral DNA where HBcAg is displayed.[2] Although HBV is doubled-stranded, the plus strand is shorter than the minus strand. The missing piece in the plus strand exists outside of the virus as a viral fragment, HBe antigen (HBeAg). Therefore, if HBeAg is detected, there is active HBV replication occurring in hepatocytes. HBV carriers are patients who demonstrate persistent hepatitis B surface antigenemia. The presence of active viral replication in hepatocytes will be indicated by finding serologic HBe antigen. Carriers do not have antibody to the HBsAg.

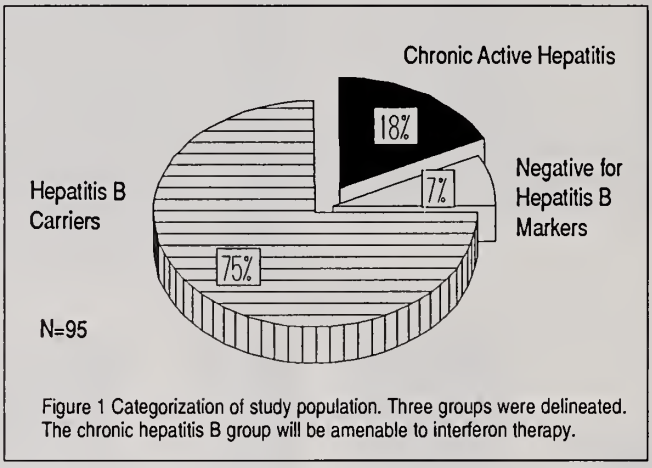


Figure 1 Categorization of study population. Three groups were delineated. The chronic hepatitis B group will be amenable to interferon therapy.

The immunomodulating and anti-viral effect of interferon (IFN) has been demonstrated to be effective in up to 50% of chronic, active hepatitis B patients.[2-6] The FDA approved interferon therapy for HBeAg–positive patients in July 1992.

NK cells, large granular lymphocytes, are considered important in natural immunosurveillance in cancer and certain infectious diseases.[10] NK–cell cytotoxicity does not require prior exposure to antigen and is not MHC restricted. We evaluated the hepatitis B antigen/antibody levels and immunological status of volunteers from the registry of the Hawaii Department of Health to select hepatitis B patients for long-term interferon therapy and to determine the possible deficiencies in natural killer cell activity in these patients.

Methods and Material

Patient Population.–The Epidemiology Branch of the Hawaii State Department of Health contacted patients with chronic hepatitis B who were registered in its HBV program to obtain patient permission to be retested and staged for possible therapy with interferon alpha-2b. Patients replying in the affirmative were contacted and scheduled for evaluation of their hepatitis Be antigen/antibody status and retesting of their hepatitis B surface antigen/antibody status and serum ALT(SGPT) levels. Information on birthplace, ethnicity and other standard demographic data were obtained from each patient; all patients signed informed consent forms. HBsAg and antibody to HBsAg (anti-HBs) were performed at St. Francis Medical Center, while HBeAg and anti-HBe were performed by SmithKline Beecham

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Laboratories, both using diagnostic materials by Abbott Laboratories, North Chicago, Illinois.

Immunological Evaluation.–Natural killer cell activity (NK) to the K562 erythroleukemia cell and herpes simplex virus–infected fibroblast cell were analyzed in the first 50 patients. Standard chromium-release cytotoxic assays were performed with Ficoll-Hypaque–separated peripheral blood mononuclear cells as previously reported.[7-9] The controls were healthy volunteers who were recruited from the laboratory, medical center and community organizations.

Statistical Analyses.–Data was analyzed utilizing the PC Stat program from Human System Dynamics, Northridge, California. NK activity was analyzed using the Mann-Whitney non-parametric test. Data is reported as the mean ±1 SD.

Results

This report defines chronic, active hepatitis B patients as those with HBsAg and HBeAg, without anti-HBe and anti-HBs. Chronic hepatitis B carriers are defined as those patients who are HBsAg–positive, anti-HBs negative and anti-HBe positive in response to their hepatitis infection. (Table 1) Ninety-five patients agreed to be considered for the study: 17/95(18%) had chronic, active hepatitis B, 71/95 (75%) were hepatitis B carriers and 7/95 (7%) had no remaining evidence of hepatitis B markers. (Figure 1)

Sixty-one women and 27 men were positive for hepatitis B. The same women–to–men ratio was observed in the chronic, active and carrier groups. The chronic, active hepatitis B group was younger than the carrier group, averaging 32 years of age as opposed to the carrier group, which averaged 39 years, P=<.04.

Table 1 Staging Hepatitis B

Population	HBeAg	anti-HBe	HBsAg	anti-HBs
Chronic Active Hep B	+	-	+	-
Chronic Hep B (Carrier)	-	+	+	-

Table 2. NK activity of chronic Hepatitis B Patients (X±SD)

	N	K562 20% (lu)	N	HSV-1 20% (lu)
Control	31	100 ±76	31	48 ± 35
Hep B-Active	12	78 ±55	10	48 ± 45
Hep B-Carrier	23	69 ±54*	23	34 ± 33**

(lu): Mean lytic units is defined as the number of effector cells/10E+7 required to achieve 20% lysis of the target cells of NK activity of blood lymphocytes.

Mann-Whitney Non-parametric Analysis.
*p<.05 **p<.02

The major ethnic distribution of the entire group studied consisted of the following: Filipino (33%), Chinese (17%), Vietnamese (12.5%), Japanese (10%), mixed Asian (8%), and Korean (6%). Most of the Filipinos and Vietnamese were not born in the United States; some of the Chinese and Japanese were born in Hawaii. These same 5 races predominated in the active hepatitis group. No active patients were identified in the Samoan, Polynesian, Laotian, Caucasian or mixed ethnic groups. We could not accurately determine when the patients were initially infected.

Serum ALT (SGPT) levels were elevated in all except 2 of the chronic active hepatitis B patients, X (mean) = 100 ±128. Only 3/71 (9%) hepatitis B carriers had ALT level >1.3x high normal value.

NK Activity.–Mean values of NK activity (lytic units in 20% Kill) to the K562 erythroleukemia cell line were 100 ±82 lytic units in the control individuals, but lower, 78 ±55 lytic units in the chronic active hepatitis B and 69 ±54 lytic units in the carrier hepatitis B group. (Table 2) A significant difference was noted with non-parametric analysis for NK (K562) activity (P<.05) and for NK (HSV-1) activity (P<.02). The patients who had spontaneously seroconverted had NK(K562) activity of 146 ±72, not significantly different from that of the controls.

Discussion

Previously diagnosed chronic hepatitis B patients were screened to delineate patients who would qualify for therapy with recombinant interferon alpha-2b. We have identified a high 18% incidence of chronic active hepatitis B in this population. This is the stage of the disease that has been reported to respond to therapy with long–term interferon alpha-2b.

The typical patient in this study was a young woman with responsible employment or who was raising a young family. Also of significance was the preponderance of patients of Asian descent who primarily were immigrants and some of the Chinese and Japanese who were born in Hawaii.

Young hepatitis B patients should be treated to prevent the development of cirrhosis and/or hepatoma in the future. The State of Hawaii has developed a successful hepatitis B vaccination program in the newborn population. Efforts and attention should also be directed to immigrants arriving in Hawaii from areas of the world endemic for HBV.

As licensed by the FDA, interferon is administered at 5 million units daily or 10 million units 3 times a week for 4 months. Fatigue, a side-effect of interferon at these levels, generally is significant, which might influence the productivity of these patients over long periods. Therapeutic trials must be designed to allow these patients to function normally.

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➤ *Continued on page 49*

➤ *Continued from page 39*

medical care at Tripler Army Medical Center can arrange for an appointment by calling either Gail or Barbara in the Infectious Diseases Clinic at 433-6513. Happy trails to you!

Philip Bruno DO FACP
Lieutenant Colonel Medical Corps

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

Historical Notes

John A. Breinich
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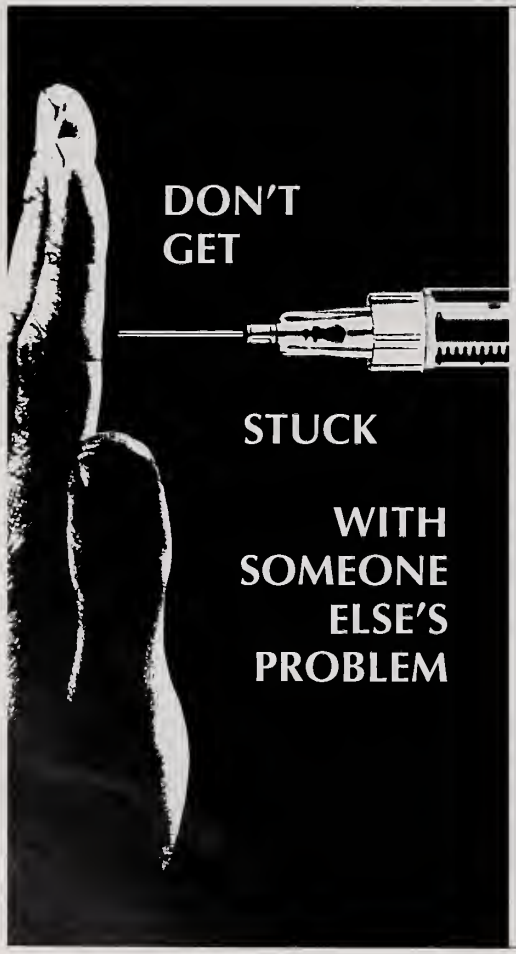
The *Hawaii Medical Journal* began life with Volume 1 issue 1 in September 1941. As the Editorial Page announced by the first editor **Harry L. Arnold Jr.** MD, "The Bulletin is dead. Long live the *Journal*." Previous to this time, papers by members of the Territorial Medical Association were presented at meetings. There had been strong interest for a long time to create a more substantial record of these papers and in 1941 the *Journal* was born. The first issue of the *Journal* contained 71 pages of papers read before the 51st Annual Meeting of the Hawaii Territorial Medical Society as well as other papers, editorials, and the proceedings of the annual meeting. It was a great beginning to the more than 50 years of excellent medical writing in the *Journal*.

The words of **Dr Arnold** in his first editorial are still true today: "Establishment of the *Hawaii Medical Journal* signalized by the appearance of this Number 1 issue of Volume 1, should not be considered an end in itself — even though it represents the fulfillment of an aspiration which certain members of the profession have long kept alive...

"This is a beginning, rather than an end attained, and it behooves the staff and the rest of the profession to pause to consider of what it is the beginning—what is the task to which the career of the *Journal* must be dedicated if it is to justify its existence...

"Knowledge is a source of power, and the dissemination of knowledge is one task to which the *Journal* is dedicated, not especially generalized knowledge of the sort which can be gained from perusal of the old established national medical journals, but more particularly knowledge pertaining to medicine in Hawaii, that all in our profession here and others who may care to read may know what are our problems and what is being done to solve them. There is something about words put down in black and white on paper which crystallizes thought and makes usable and effective ideas which, conveyed by spoken word, escape from mind and memory all too soon...

"If to the betterment of the profession, and to the betterment of Hawaii, the efforts of the present and future editorial staffs are dedicated, the success of the *Journal* is assured."



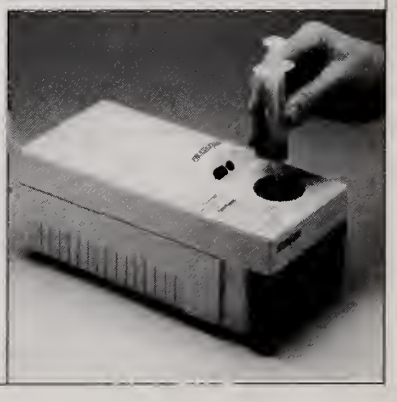
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News and Notes Henry Yokoyama, MD

Life in these parts

Hawaiian Rent All signs

"Our tampers have a smashing effect"
"Let us be your gardening angel"
"Unisex strippers for rent"

Dew Drop Inn

A tiny northern-Chinese-cuisine restaurant near the corner of Beretania and Pensacola with an inviting name.

Bumper sticker

"You're not my hemorrhoid—Get off my ass" Battered old Chevy pickup with a friendly warning.

Professional moves

September: Kauai Medical Group added 4 new members: pediatrician **Paul Ross,** osteopath **Larry Wampler,** orthopod **Richard Davis,** and nurse midwife **Claudia Brown.**

George Seberg opened the East Oahu Medical Clinic at the Aina Haina Professional Bldg.

Pediatrician **Bridgit Rovner** joined Pearl City Medical Associates at Kapiolani Medical Center at Pali Momi.

October: Rheumatologist **Alan Oki** opened his practice at Kapiolani Medical Center at Pali Momi, Suite 300.

November: **Alan Tanaka** joined the Physicians' Anesthesia Service at KMP, Suite 306. **Dennis Crowley** opened his practice in physical medicine, electrodiagnosis and rehabilitation at Kapiolani Medical Center at Pali Momi, Suite 250.

Psychiatrist **Carol Brown** started a 2-year sabbatical and **John Puritzer** will care for her patients at Queens' POB, Suite 909.

Internist **Thomas Cheek** and urgent care specialist **Robert Koermer** joined Straub Hawaii Kai. Urgent care specialist **Boynan Cao** joined Straub Kaneohe. OB-gyn **Richard Oh** opened his practice at Wahiawa Business Center and St. Francis Medical Plaza West.

Internist-pulmonary specialist **Joseph Palma** relocated to Kailua Professional Center I where he joins **Philip Foti** and **Howard Keller.**

Miscellany

The young internist doing an H&P on a young single woman tried to be discreet: "Do you have S-E-X?" The woman, who thought he was inquiring about her medical insurance, replied, "Honey, I have H-M-S-A." (As told by our humorist friend, Andrew Uramoto.)

A surgeon, an architect and a politician were arguing about whose profession was the oldest. Surgeon: "Eve was made from Adam's rib. That is a surgical operation." Architect: "But prior to that, order was created out of chaos and that was an architectural job." "But," interrupted the politician, "somebody created the chaos first."

Sportsmen

Ever notice that the older you get, the better athlete you used to be?

A lot of us have seen the light, but for many of us it's the one inside the refrigerator. (From *Mature Living*)

Elected, honored and appointed

Scott Hundahl, Grant Stemmerman, and **Andrew Oishi** represented Kuakini Medical Center at the 5th General Meeting of the World Health Organizations' Collaborating Centers for Gastric Cancer Research and won top prize. Their research compared the survival rates for all stages of gastric cancer in Japanese patients treated in Honolulu and Tokyo. Scott summarized the reasons for the higher survival in Japan as the more radical approach used by Japanese surgeons and their routine use of peri-operative chemotherapy.

Norman Goldstein was named A.H. Robins Physician of the Year by the Hawaii Medical Association for his dedication and commitment to community service. Norman had a year-long community education program, the "Practice Safe Sun" project on skin cancer, skin protection and sunscreen use.

Marion Hanlon, pediatrician and medical director at Maui Memorial Hospital, was chosen to head a team of 7 specialists involved in technical and cultural exchanges in Russia and Estonia. The team explored issues involving the training of health-care personal, family planning and adolescent diseases.

Issues

Philip Hellreich, director of HFPD (Hawaii Federation of Physicians and Dentists) and a Republican Party leader says, "We're about to destroy our whole medical system in this country—which 80% of the people are happy with—for 20% of the people who claim they cannot afford it." Philip suggests the U.S.:

- Implement tort reform for medical practice.
- Provide a basic health package for those who can afford it and give tax credit for the purchase.
- Limit the tax credit to $6,000 for example—what people don't use for a medical plan could be placed in an interest-bearing account for future medical costs or retirement.
- Require employees to provide catastrophic insurance for employees and their families and give employers a tax credit.
- Provide insurance for those who can't afford it.

Jack Lewin, State Health Director, says Health QUEST (in which the State will purchase insurance for the needy and turn over the responsibility to professional clinics) will take government out of the medical business and put health care in the hands of professionals. Jack says, "The problem in Medicaid is getting primary care and prevention to the population and secondly, the cost of the program is increasing rapidly even though hospitals and physicians are being reimbursed at rates that are too low."

The Clinton drug plan

Earlier in September, White House officials had indicated that drug coverage could add $8 or $9 a month to Medicare Part B premiums, but in October a government official indicated the added cost would be $12 a month. Medicare patients will pay a $250 annual deductible and 20% of the cost of each prescription. There will be a $1,000 limit on annual out-of-pocket expenses after which the patient gets drugs free for the rest of the year.

Medical humor

(A condensed story from *Stitches,* Jan-Feb 1993)

I was sitting outside the ER when I was in my residency in Michigan. We'd gotten a call that an ambulance was en route to the ER. An elderly woman with a right-leg cast was waiting for a ride home. "What's up, Doctor?" she said, perhaps reading the concern on my face. "Well, there's an emergency patient coming in from Eaton Rapids," I said. Later, when her ride arrived, the woman spoke to her driver. "You won't believe it," she said. "I spoke to that young doctor over there. There's an emergency patient coming in and guess what's wrong?" "I don't know, what?" "The person got sick from eating rabbits." (Rob Norman MD, Medford, Mass.)

More medical humor

(Condensed sketches from *Stitches*, Nov-Dec 1993)

A young intern taking a careful gyn history asked an older woman, "Are you and your husband still practicing sexual intercourse?" "No!" she said emphatically and added smugly, "My husband and I are no longer practicing. We are now very, very good at it."

A Native American couple named their first born Gray Morning Mist. "What do you call her when you want her?" the doctor asked.



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"Gray," replied the mother. Later when a second baby girl was born, they named her Walks On Water. "How will you shorten that name?" asked the same doctor. "WOW!" was the reply.

Health hints

(from Mits Tottori's bulletin board)

When your mouth is afire from a hot Mexican dish such as salsa, cool off with a glass of milk. The substance in chili pepper is capsaicin which binds to taste receptors. Casein in milk acts like a detergent and washes the capsaicin off. (According to Robert Henkin MD of the Taste and Smell Clinic, Washington DC)

Fresh mushrooms should always be refrigerated in paper bags, not plastic. Mushrooms need the flow of air to keep from decaying rapidly. (Incidentally, a cup of mushrooms is a mere 21 calories.)

Refrigerators and freezers kept 10 degrees colder than necessary use up to 25% more energy. (Foods can be stored safely at 40 degrees Fahrenheit in a refrigerator and at zero degrees in a freezer.)

Milk or dairy foods do not create mucus when a person has a cold. Three separate studies by scientists at the Royal Adelaide Hospital in Australia showed no link between mucus formation and milk or other dairy products.

Potpourri

A butler named James worked for a wealthy couple. The wife was very beautiful and much younger than her husband. One evening they told James they'd be out late, but the wife came home alone earlier than expected.

"James," she said, "come to my room." He followed her. She closed the door and said, "Take off my dress." He did so. "Now my stockings," she continued. He rolled them down. "And off with my lingerie." He removed all that too. "Now James," she said looking him in the eye, "don't ever let me find you wearing my clothes again!" (From "Laughter, the Best Medicine," *Reader's Digest*, October '93.)

Oncology dialogue

A 66-year-old oriental woman with non-steroidal lupus was evaluated for crippling stomach pains. Gastroenterologist **Warren Ono** showed beautiful EGD color slides of extensive gastric lymphoma. Scans showed mesenteric adenopathy. Chemotherapist **Dennis Wachi,** the attending, wondered if she should not have a prophylactic total gastrectomy because of the inherent danger of perforation and hemorrhage with systemic therapy. Oncologic surgeon **Scott Hundahl** reported that recent reports indicate a lower incidence of perforation. Radiotherapist **Lois Mastrofrancesco** remarked how miserable the quality of life was for post-total gastrectomy patients. Chemotherapist **Kaye Kawahara** agreed the danger of perforation was low and that the patient should be started on systemic therapy without surgery. Scott grimly added that the mortality

rate was 50% should perforation occur. Cancer Research Center of Hawaii director, **Brian Issell**, reported that during his 5 years at Stanford, the incidence of perforation had been very low. Dennis wondered if surgery was contraindicated anyway because of the omental and peritoneal adenopathy. Scott could not commit himself without first reviewing the scans personally.

Moderator **Ken Sumida** summarized: "Apparently everyone will go along with chemotherapy without a total gastrectomy." For once, everyone was in accord.

Novel treatment

(By James Watt Toronto, *Punch*, June 1993)

A long time ago when I was an intern at a Toronto teaching hospital, a patient came to emergency with a fish bone stuck in her throat. The ENT staff physician on call was contacted and the intern was told to take the patient to the ENT operating room.

Just outside emergency was a corridor with a gently sloping ramp leading to another part of the hospital where the ENT OR was located.

At the top of the ramp, the intern lost control of the wheelchair, and it hurtled down the ramp. At the bottom of the ramp, one of the wheels of the wheelchair caught on the doorway and the patient was thrown to the ground. The patient immediately coughed up the fish bone.

With great presence of mind the intern said, "You're awfully lucky, lady—usually we have to do this 2 or 3 times before we get it out."

Oncology conference

(December 9, 1993)

Former KMC pathologist emeritus **Grant Stemmerman** (Now working out of Cincinnati) spoke on his favorite subject "Intestinal metaplasia and gastric cancer."

Oncologist **Kaye Kawahara** presented a 52-year-old Filipino man who had stopped smoking 10 years before but had a T3 lesion of the larynx when worked up for persistent hoarseness by ENT **Meredith Pang**. Radiologist **Howard Arimoto** showed CT scans of the lesion. Moderator **Lois Mastrofrancesco** asked Stemmy the probability of cancer after quitting smoking more than 10 years. Stemmy remarked that the probability curve was still quite high. He added, "Filipinos have the lowest cancer incidence in Hawaii because of their high vegetable diet. It is remarkable that he does have cancer." Kaye explained that this Filipino man was a robust meat eater and did not like his veggies.

Lois, a quality-of-life advocate, explained that traditionally larngeal Ca was treated with laryngectomy followed by chemo or radiation; now the trend is larynx preservation when possible viz chemo and radiation first and if this fails, laryngectomy. The survival curves are the same.

Do unto others

(James Fisher, Jr.)

▲ "To have a friend, you must be a friend, starting with yourself."

▲ "The greatest virtue is kindness. You can't love everyone, but you can be kind to everyone."

▲ "Be enthusiastic. Nothing of consequence was ever achieved without enthusiasm."

▲ "Be positive. Positive people attract others while negative people repel."

(From *Readers Digest*, June 1993)

The Immunologic Staging of Chronic Active Hepatits B Patients in Hawaii

➤ *Continued from page 45*

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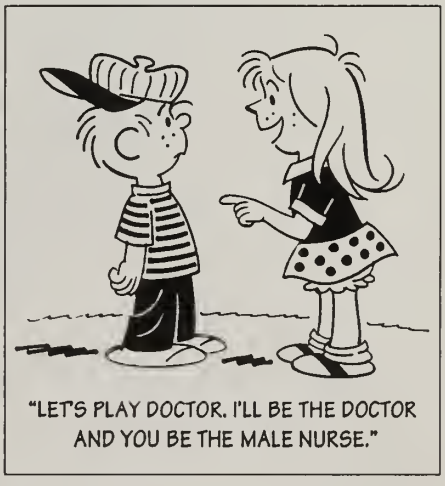
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With a strong aroma (noxious odor?) of Gail Wilensky's cataract surgery and CABG projects, the administration's "Centers of Excellence" proposal would lock patients into cataract surgery, coronary artery bypass surgery and some other services by offering a rebate of 10% of the difference between the Medicare rate and the center's negotiated rate. When the already oppressive ratcheting down (and future decreases) of cataract reimbursement and the reduction in IOL payments are considered, the "Centers of Excellence" will possibly be penurious piazzas of mediocrity with medical quality residing in the red barrel with toxic waste.

Every solution breeds new problems

The White House plan promises that fee for service (FFS) will survive, but then proceeds with multiple obstructions: 1. A ban on balance billing and negotiated fee schedules, 2. FFS plans would have trouble meeting the requirement that Health Alliances could reject plans that cost 20% more than average, 3. HMOs will offer advantages to younger patients who might seek lower out-of-pocket costs.

When things just can't get any worse, they will

If fee for service is in jeopardy with the White House plan, then the outlook for physician–owned group practice is total extinction. A close reading of the bill suggests that referrals to another physician within the same group practice would not be exempted under the self-referral ban. According to Randy Teach of the Medical Group Management Association, if adopted in its present form, the bill "would abolish the in-office practice exemption." The only groups that would escape the change are those in rural areas and nonprofit entities, such as the Mayo Clinic, whose physicians are on fixed salaries.

The jawbone of an ass is still a dangerous weapon

As if there were not enough hot air, exaggerations, distortions, and pompous posturing from our congresspersons, Rep Robert Dornan (R-CA) wrote in the *National Enquirer* (expiring minds want to know) that "federal investigators have discovered that as many as 240,000 people—one in four—who have cataract operations don't need it." Of course, in the manner of the late Sen Joe McCarthy (the all-time congressional champion donkey) Rep Dornan gave no reference to support his braying. AAO President Thomas Hutchinson MD felt compelled to write to the publication noting how erroneous the statement is and the Academy sent copies of his response to newspapers, radio and TV outlets in Dornan's district, 6,000 nursing homes, the AARP, and other areas of California. Well, okay, but sometimes when statements are so patently absurd, it is equally effective to merely say it is too stupid to merit a rebuttal.

Nearly all prophecies made in public are wrong

Senators are worried about the admitted proposed increase in Hillary's plan of health expenditures for 40% of Americans, stated by HHS Secretary Shalala. More over, Shalala appeared unfamiliar with many elements of the plan and could not answer several questions posed by the House health committee. Then the White House quickly jumped in stating that the number is really "only" 30%. Sen Moynihan and colleagues want to avoid the abuse they suffered when they were forced to repeal the "Catastrophic Act"—and that affected only a portion of the Medicare population.

You can fool too many of the people to much of the time

The Clinton proposal explicitly permits states to set up their own single-payer systems. The design is one that allows for the administration to step in whenever the states falter. Some analysts predict that the Clinton plan, if passed as it is currently written, could lead inevitably to the collapse of private insurance. A Seattle–based actuary, Mark Litow (Millman and Robertson) sees the project as a Trojan horse in which Hillary has proposed a plan doomed to fail, but that will open the door for the government to step in with a Canadian-style single-payer system.

When a problem goes away, the people working to solve it do not

Of course, the major distortion in the health reform *crisis* poppycock is that there is no crisis, as our White House lawyer twins know well. The true issue is the Clintons social agenda, and the perception of political popularity, both for reelection and for posterity. Inconvenient data, whether current or historic, are ignored by the White House *planners*. Uninsured Americans—were 15.8% in 1984, dropped to 13.4% in 1988, are now at 14.7%—health care price increases peaked in 1986 at 7.7%, or 7 times the CPI at 1.1%, now down to 2.1% nearly equal to the CPI increase. In fact, while focusing on the uninsured, the pundits have ignored the insured. According to census data, last year, 216.8 million Americans were covered by health-insurance plans, an all-time high! And this is cause for reform?

There is no better way of exercising the imagination than the study of law

The National Practitioners Data Bank anticipated that physician malpractice payment reports would number about 35,000 a year, but the number is actually 20,000. Why? Apparently, defendant attorneys are making it an explicit condition of settlement that the physician's name will be dropped and payment instead made in the name of a hospital, HMO, or professional corporation. The latter are not reportable to the bank. You got to admire those creative attorneys—they make the laws and then demonstrate how to circumvent them.

Addenda

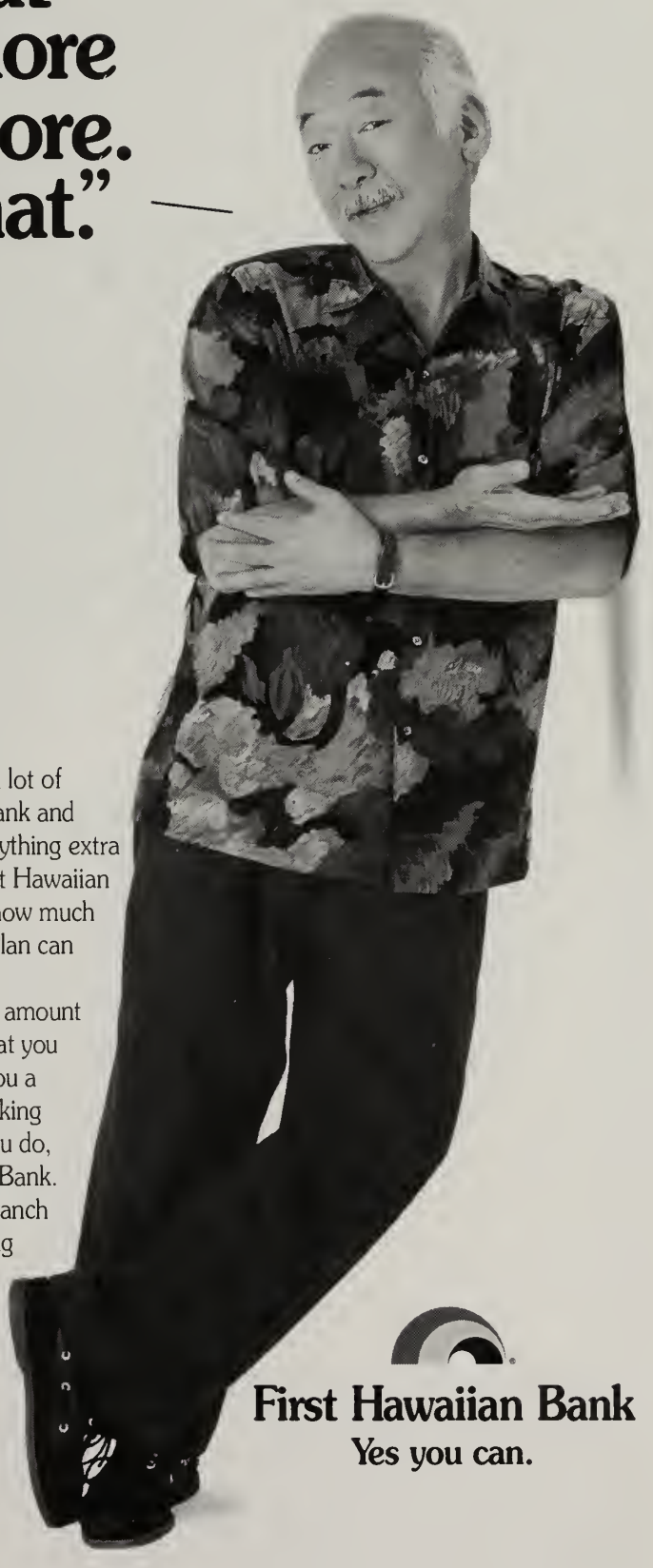
▲ It takes approximately 6 years for a child's acuity to approach 20/20—corresponding to the maturation of the macula.

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Editorials

Doctor, we need your organs! And your help!

This special issue of the *Journal* is devoted to organ transplantation in Hawaii and is dedicated to **Livingston Wong MD.** Livy, the father of Hawaii organ transplantation, and **Alan Cheung MD** have brought to the *Journal* a very special series of manuscripts. They have reviewed the past, updated the present, and will stimulate the reader to the future potential of organ transplantation.

It was in 1963 when your editor, then a dermatology resident at New York University, first became interested in organ transplantation. At that time, we were doing only preliminary work with tissue culture of basal cell cancers.[1]

Then in 1969, while at the Honolulu Medical Group, The Research and Education Foundation and the University of Hawaii School of Medicine sponsored Hawaii's first Organ Transplantation Symposium. We invited some of the most renowned authorities to speak at our symposium. They included: **Thomas Starzl MD, Robert A. Good MD, Irving Page MD,** and **David Rubsamen MD, LLB.** Local speakers included **Arnold Siemsen MD, Richard Mamiya MD,** and **Richard Kekuni Blaisdell MD.**

The Editorial Board hopes this special issue of the *Journal* will promote more interest in organ donations. Call the Hawaii Lions Eye Bank or the Makana Foundation at 536-7416 and the Organ Donor Center of Hawaii at 599-7630 for brochures and information for distribution to your patients. We need those organs!

References

1 Walker DG, Goldstein N, Kopf AW, Wright JC. Epithelial outgrowth from tissue culture of basal cell epitheliomas. *J Invest Derm.* 1994;42:435-441.

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Organ transplantation overview

This year marks the 25th anniversary of organ transplantation in Hawaii.

In August 1969, St. Francis Medical Center in Honolulu performed the state's first kidney transplant. From the beginnings of transplantation here, which has evolved to include heart, bone marrow, liver and combined pancreas and kidney transplants, the people of Hawaii now are provided the latest services in transplantation.

This special issue on organ transplantation is designed to educate and inform the practitioners of Hawaii about what's happening in transplantation.

As in any major clinical endeavor, organ transplantation requires the participation and commitment of numerous people working as a team. They include:

1. A team of nurse coordinators, social workers, and financial advisors aiding the physicians in evaluating potential candidates, caring for post-operative patients, and following patients for the rest of their lives. This is essential for recognition of potential complications, such as rejection and infection.

2. Laboratory staff and facilities performing: (a) HLA tissue typing capability and association with the ASHI; (b) specific immunological and drug monitoring; (c) anatomic/histologic pathology to identify and grade rejection and graft-versus-host disease.

3. Transplant organ procurement agency for evaluating potential cadaveric donors, obtaining appropriate consent from family members in a sensitive manner, and overseeing the entire process of organ donation. They see to it that organs are procured and allocated according to the bylaws of the national organization, UNOS (United Network for Organ Sharing).

4. Operating room staff capable of procuring organs (liver, heart, pancreas, and kidneys) and tissue (bone, bone marrow, cornea, tendons) for transplantation. This team must properly perfuse the organs, place them in preservation solution, store them for varying lengths of time, and prepare them for transportation.

5. A team of qualified surgeons to implant these organs.

6. A medical center with specialized patient rooms and trained, dedicated personnel to care for these challenging patients.

7. A team of physicians, including surgeons, internists, and specialists, capable of monitoring immunosuppressive medications and recognizing rejection and other potential complications.

8. Nurse transplant coordinators instrumental in data collection. Transplant patients must be monitored and statistics must be submitted to national and international registries. This allows our program to be measured against other programs. Our data also will contribute to both the U.S. and world experiences for each type of transplant. This will lead to a better understanding of every aspect of transplantation and ultimately improved patient care. Submission of data is often tedious and burdensome for transplant coordinators, but this is absolutely essential.

We thank all of the above individuals and institutions for their support and team work. We would also like to thank all of the contributing authors for their fine work, and Dr Norman Goldstein for this opportunity to share our excitement and experience on organ transplantation in Hawaii.

Livingston M.F. Wong MD
Alan H.S. Cheung MD

Cover art and descriptive text by
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Birth of Moloka'i

Another amazing birth attributed to the goddess Hina was that of the wondrous hog-child, *Kamapua'a*. A pig at birth, Kamapua'a was a *kupua* or shape-changer and could assume either the body of a hog, a handsome young man, or even a fish.

Hina's hog-child had many fantastic, comical and violent adventures. He was a notorious thief and relentless womanizer; his greatest conquest was the volcano goddess, *Pele*, with whom he had a tempestuous affair. Pele and Kamapua'a had a child, and this grandson of Hina became the god of thieves and medical practitioners.

The collected adventures of Kamapua'a are an excellent example of a *ka'ao* or a lengthy story recited from memory. It is said that the Ka'ao of Kamapua'a took 16 hours to recite; such incredible feats of memory were common to old Hawaiian storytellers.



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HMA President's Message

Andrew Don MD

Congratulations on the 25th anniversary of organ transplantation in Hawaii. I feel certain that the physicians of Hawaii join me in expressing our appreciation to the authors featured in this special issue of *Hawaii Medical Journal* for bringing us current information regarding transplants. Too often the medical profession goes unrecognized for their accomplishments in improving the quality of life for Hawaii's citizens. Its sad to see that so few in our community realize the role organized medicine has played in shaping the health care system in our State.

In the State Legislature, hundreds of bills have been passed or held based on testimony presented by our physicians. Over the years, for example, physicians have been instrumental in developing the emergency medical services system, helping to implement a school health system in all public schools, nurturing the child protective services system with its child abuse laws as well as founding unique programs to help prevent child abuse.

The freedom to choose one's physician was fostered by HMA for the Workers' Compensation program as well as the Medicaid program.

In cooperation with the Department of Health, American Cancer Society and the Medical School, the Hawaii Tumor Registry has tracked cancer cases since the 1950s.The development of the Hawaii Claims Conciliation Panels which hear all medical tort cases prior to entering the court system has saved thousands of dollars in litigation costs: The tort laws regarding informed consent, access to medical records, protection for physicians who serve on peer review committees, or who are good samaritans have all come about through the efforts of HMA physicians.

HMA initially developed a coding system, known as the RVS or Relative Value System, which has enabled physicians and insurers to speak a common language when claims for services are filed. And when all the professional liability insurers moved from Hawaii, HMA searched for ways to offer coverage to Hawaii physicians and was successful in encouraging the Medical Insurance Exchange of California to provide coverage for Hawaii physicians.Our peer review committees have reviewed complaints made by patients against HMA members in an effort



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to bring some resolution to problems: All at no cost to the patient.The continuing medical education accreditation program was begun by Hawaii Medical Association; hospitals, specialty societies, and others are surveyed and accredited by the HMA program.These are but a few of the achievements of the medical profession in Hawaii. Physicians will continue to be advocates for their patients and for a health care system second to none. We hope *Hawaii Medical Journal* will continue to acknowledge the contributions of Hawaii Medical Association to Hawaii physicians and the community.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Central Identification Laboratory

At Fort Kamehameha, a small army enclave on the edge of sprawling Hickam Air Force Base, is located the world's only forensic science laboratory dedicated solely to the recovery and identification of U.S. service members lost in past military conflicts. The U.S. Army Central Identification Laboratory, Hawaii—more commonly known as CILHI—is the last and most permanent incarnation in a long line of "CILs" dating back to World War II. In 1973 the army established a Central Identification Laboratory at Camp Samae San, Thailand and charged that organization with the responsibility of identifying the remains of personnel killed or carried as missing from the Vietnam War. In 1976 the laboratory was moved to Hawaii and the organization's role subsequently expanded to include the identification of remains from World War II and the Korean Conflict in addition to those recovered from Southeast Asia.

The laboratory currently employs 8 civilian forensic anthropologists, a civilian forensic odontologist, and 2 military dentists for the purpose of affecting identifications of skeletal and dental remains. A military staff of approximately 140 organize and execute the search-and-recovery operations and administer the nonscientific aspects of the organization.

An integral component of the forensic identification process is the acquisition and curation of antemortem medical and dental records for those individuals whose identification is sought. CILHI's Casualty Data Section maintains available medical and dental records for the 2,238 U.S. service members unaccounted for from the war in Southeast Asia and the approximately 8,200 individuals carried as missing from the Korean War. In addition, antemortem records for World War II losses can be ordered as needed from other U.S. government record centers.

The goal of the CILHI is to determine or estimate enough individual characteristics to establish a favorable comparison between the biological remains under study and the antemortem records of a known individual. Most commonly this involves a positive dental match combined with supportive anthropological determinations of such characteristics as sex, race, age, and stature. Less commonly, individual characteristics such as handedness, pathological conditions (eg, arthritis, anemia), traumatic wounds (eg, healed fractures), and congenital disorders (eg, deformed, missing, or supernumerary elements) can be diagnosed. Certain occupations or habits might also be detectable from skeletal remains. Habitual pipe smokers, for instance, can sometimes be detected by deviation in the occlusal angle of the teeth used to clamp the pipestem.

Other information derived from the forensic analyses might include circumstances of death (eg, a gunshot wound versus a high-speed impact).

More recently, CILHI has begun utilizing the emerging technology of DNA analysis. While still a relatively new science—at least with regards concerning DNA typing of bone samples—DNA analysis promises a new approach to many difficult cases that have eluded identification in the past.

While the obstacles at times appear daunting, the future actually is bright. New and emerging technological advances combined with increasing access to former combat theaters previously inaccessible to the U.S. augurs well for the identification of U.S. service members lost in past conflicts and with that, the resolution of perhaps the most-personal and private side of war.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

Historical Notes

John A. Breinich
Hawaii Medical Library

With this special issue of the *Journal* dedicated to transplantation, it is appropriate to look back at the first successful kidney transplant in Hawaii 25 years ago. On August 10, 13, and 17, 1969, a team of physicians at St. Francis Hospital conducted the first kidney transplants. The surgical transplant team was led by Drs Livingston Wong, Herbert Chinn, Glenn Kokame, Richard Pang, and Walton Shim. Dr Arnold Siemsen was director of the hemodialysis center at St. Francis and was behind the kidney transplant program at the hospital. The first procedure ended in rejection, but the second and third transplants were successful. Since that time, kidney transplantations have become routine. Other more recent firsts include Hawaii's first bone marrow transplant on March 31, 1978, the first heart transplant on March 11, 1987, and the first liver transplant on September 26, 1992.

In November 1970, the Makana Foundation (*makana* can be translated as gift or to give freely in Hawaiian) was established by John J. Stanford and others who felt the need to do something in the community to assist in matching donors and recipients with needed organs. In 1980 the Foundation merged with the Hawaii Lions Eye Foundation and is still involved today in this work. Their primary activity is in eye tissue, and they work closely with the Organ Donor Center of Hawaii, established in 1987.

Highlights of the HMA Council Meeting of January 7, 1994

The HMA Council met January 7, 1994. Members present were: Drs A. Don, F. Holschuh, C. Lehman, J. Spangler, J. Chang, C. Kam, R. Stodd, A. Kunimoto, P. Blanchette, B. Shitamoto, R. Goodale, T. Smith, D. Canete, P. Chinn, W. Dang Jr, P. Hellreich, M. Shirasu, K. Thorburn, C. Wong, J. Betwee, C. Kadooka, W. Chang, W. Dang, G. Goto, J. Lumeng, J. McDonnell, S. Wallach, M. Montoya, M. Lau, N. Goldstein. HMA Alliance president Susan Foo and medical student A. Mateo. Guests: Drs W. Foo, G. Yuen, S. Vitousek, A. Oki; R. Neupauer and R. Caron from MIEC; Mmes E. Don, K. Yuen, S. Wong. Staff: J. Won, B. Kendro, N. Jones, L. Tong, J. Asato, J. Estioko, Diane Shiraishi (recording secretary).

The Council heard a report from Dr Sharon Vitousek on the proposed medical assessment program. Significant funding totaling $460,000 has been committed by HMSA, various hospitals, and HDS; HMA was asked to contribute. Council voted to contribute $5,000.

Dr Norman Goldstein, newly appointed editor of the *Hawaii Medical Journal*, reported that the *HMJ* is progressing within its new guidelines, being typeset and prepared in–house and printed by Pacific Printers. Dr Goldstein requested names of physicians willing to review and read articles prior to their publication.

Ron Neupauer, vice president of underwriting for Medical Insurance Exchange of California (MIEC), reported that MIEC has worked with physicians since 1981. The numbers of policies in Hawaii increased from 150 in 1982 to 700 in 1984 and has remained between 800 to 900 from 1985 to 1992. The highest number of MIEC Hawaii claims reported were in 1986, 1991, and 1993. MIEC has been very supportive of HMA, has presented seminars over the years, and looks forward to continuing those seminars in the future.

Mrs Susan Foo, president of the HMA Alliance, reported that group is actively working on a large fund-raising banquet scheduled for Sunday, March 13. The HMA will join the festivities by presenting the 1993 Distinguished Medical Reporting Awards that night. The proceeds of this event will be donated to an endowment fund for medical education and research at the John A. Burns School of Medicine.

Dr Fred Holschuh discussed the need for pre-test counseling for HIV/AIDS in emergency departments. The HMA HIV/AIDS Committee will work on developing simplified pre-test counseling guidelines. The International AIDS Conference will be held in Japan in 1994 and a team of experts will stopover in Hawaii for a conference. HMA Council voted to support the conference by donating $500.

The Hawaii Federation of Physicians and Dentists published a red alert in December 1993 with specific mention of HMA and its activities. The red alert suggested that several unrelated activities were part of a generalized plan. President Andrew Don responded to the red alert with a letter to the Federation clarifying HMA's position on the subjects mentioned in the alert.

The Nurse Prescribing Committee was asked to further discuss this issue and report back to Council at its next meeting.

Corporate papers for the Independent Physicians Network of Hawaii Inc (IPN) commonly referred to as the IPA, have been completed but not filed as yet. Further organization and funding were discussed and Council voted that fewer than 24 stockholders can purchase shares of stock up to a total of $50,000 to provide funding for profiling the organization.



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HMA Alliance

Susan L. Foo, President

Sex, politics, religion—enough controversy can be generated dealing with each subject alone, so consider what happens when a group of doctors' wives begin to sound off about topics such as the current state of health system reform, not allowing themselves to be intimidated by a few sacred cows that might be standing in the way! Recently, some criticism was voiced about the Alliance being too *strong* or *outspoken,* or wandering too far off the fashion show/fund-raiser circuit.

To loosely paraphrase HMA President Andy Don's remarks at his inauguration, physicians have an obligation to be the guardians of quality medical care in this country.

The politicizing of medicine was not really welcomed by the vast majority of medical families, but since it is now reality, members of the HMA Alliance who have some real-life contact with current problems feel an obligation to expose them so solutions can be found. In the midst of so much change occurring so quickly in the medical profession, controversy is inevitable.

For some, running away from it all has seemed like the best bet: Can't do anything about it, so no use getting involved. The increasing hassles of governmental or legal intrusions into the practice of medicine still affect them, but they try not to think about it and adapt as well as they can.

Another segment of the medical community sees a big steamroller coming toward them: Can't stop it, might as well try to find some way to jump on, avoid getting hurt. The problem is, they also add their collective weight to the moving object heading toward the others down the road.

Still another group of physicians and their spouses see that change in the practice of medicine is inevitable, and firmly believe they must voice their opinions because they will still have the responsibility of implementing health policy at the everyday, routine level: Eyeball-to-eyeball with a sick patient.

Here in Hawaii, many bills directly affecting the quality of medical care are working their way through the legislative process. We owe it to ourselves and the people of Hawaii to become familiar with the hot topics of the day: Managed care, global budgets, gatekeepers and PCP's prescriptive authority for non-MDs, etc.

But above all, we should grasp the opportunity to contribute our valuable perspectives gained through years of experience with the delivery of health care to the continuing debate about health system reform. Not everyone will agree with a given opinion, but the HMA Alliance welcomes a lively debate. We're all in it together, we're family, and our combined energy certainly makes a positive difference in this community!

Susan Chong Wong Esq
HMA Alliance Legislative Committee

Medical School Hotline

John A. Burns School of Medicine
Naleen N. Andrade MD
Associate Professor and Associate Chair
Department of Psychiatry

Developments in Psychiatry

In July 1990, the John A. Burns School of Medicine's Department of Psychiatry embarked on two distinct, yet complementary tracts of service: training and research.

The first track involved forming the State/University Collaboration between the Department of Health's Behavioral Health Administration and the Department of Psychiatry. The second involved establishing the Native Hawaiian Mental Health Research Development Program.

The state/university collaboration program

Hawaii's State/University Collaboration is part of the national program between the American Psychiatric Association and the National Association of State Mental Health Program Directors, whose goal is to improve the quality of psychiatric care within public mental health systems.

The Collaboration began with a primary focus of reorganizing and strengthening the psychiatric services at the Hawaii State Hospital through joint-appointed psychiatric faculty and has carefully moved into selected outpatient community mental health centers on the islands of Oahu, Kauai, Molokai, and Hawaii.

The psychiatric gains made at the State Hospital in Kaneohe are substantial. Prior to the State/University Collaboration, Hawaii State Hospital had a 50% vacancy rate of psychiatrists, no permanent clinical director, no forensic psychiatry expertise, no alcohol and substance abuse expertise, and no geriatric and neuropsychiatric expertise. To date, all vacant psychiatric positions have been filled with qualified full-time, joint-appointed psychiatry faculty who provide direct service, teaching, and outcomes-related research. Furthermore, faculty with expertise in forensics, geriatrics, neuropsychiatry, and substance abuse have been recruited. Hawaii State Hospital has become one of the most exciting training sites for the Department of Psychiatry, and we hope to see the quality of services, training and research continue to be strengthened through the State/University Collaboration, the Department of Psychiatry has made a significant contribution to Hawaii's public mental health system for adults. It is our hope that in the coming year similar growth will occur within the State's Child and Adolescent Mental Health Division.

Native Hawaiian mental health research program

Since 1987, the Department of Psychiatry has built a cadre of mental health researchers to conduct Native Hawaiian mental health research. By federal policy, particular focus was given to recruit and develop Native Hawaiians; five Native Hawaiians

are the co-principal investigators. Two federal grants were awarded: In 1990, a two-year NIH supplemental research grant, through the University's Research Centers for Minority Institutions (RCMI) program for $303,000 and in 1992, a three-year National Institute of Mental Health (NIMH), Minority Institutions Research Development Program (MIRDP) for $885,769. These grants fund a longitudinal epidemiologic study of about 6,000 adolescents and provide the first epidemiologic data on Hawaiian adolescents. Three papers written by the researchers have been accepted for presentation at the May 1994 American Psychiatric Association meeting in Philadelphia. Plans are currently underway to expand the MIRDP project and submit a Minority Research Center grant proposal to NIMH within the next several months. In addition to Native Hawaiians, these future proposals will include Asians, another designated special population.



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25 Years of Kidney Transplantation in Hawaii

Alan H.S. Cheung MD, Mary S. Wheeler MSN, Fong-Liang Fan MD, Whitney M.L. Limm MD, Linda L. Wong MD, Richard K.S. Pang MD, Herbert Y.H. Chinn MD, Livingston M.F. Wong MD

The first kidney transplant in Hawaii was performed in August 1969. In the following 25 years, more than 433 kidney transplants were performed. The most common etiology leading to transplantation was chronic glomerulonephritis. Patient and graft survivals after a kidney transplant have progressively improved, particularly after the introduction of cyclosporine in 1984. The overall one-year patient and graft survival rates now are 96% and 85%, respectively; these results exceed the national averages.

Introduction

The first kidney transplant in Hawaii was performed in August 1969 on a 43–year–old man with a diagnosis of membranous glomerulonephritis. Prior to the transplant, he had been maintained on hemodialysis for 17 months. The early efforts of Drs Livingston Wong, David Hume, Arnold Siemsen, and Herbert Y.H. Chinn brought about this surgical procedure; combined with excellent follow-up care provided by the nephrologists, the quality of life for many patients with end-stage renal disease has improved. The growth and development of this new technology was crucial in Hawaii where geographic isolation might otherwise force many patients to travel to the Mainland for kidney transplantation or to remain on dialysis without surgery.

The objectives of this study were to: 1. Examine St. Francis Medical Center's experience from a historical perspective; 2. Compare the results with available national statistics; 3. Review briefly the indications, techniques, and immunosuppression used in kidney transplantation.

Methods

Between August 1969 and December 1993, a total of 433 kidney transplants were performed at St. Francis Medical Center in Honolulu. The approach to patient care, including recipient and donor selection, timing of the transplant, surgical techniques, immunosuppressive protocols, treatment of rejection, and ancillary care have been similar to those described in detail in the literature.[1,2,3,4,5,6,7] Of these 433 transplants, 405 were available for analysis using the UCLA/United Network of Organ Sharing (UNOS) Scientific Registry.

The UNOS Scientific Registry was created in October 1987 following enactment of legislation contained in the Transplant Act of 1984 and records all kidney transplants performed in the United States. Prior to 1987, kidney transplantation registry data was maintained by Dr Terasaki at the UCLA Tissue Typing Laboratory. This retrospective review used the UNOS Kidney Transplant Registry data base and locally available charts at St. Francis Medical Center.

Because of the number of study patients, data was stratified into historical periods:

1. Era I–August 1969 to December 1983. This is referred to as the pre–cyclosporin A (Pre–CsA) period. Immunosuppression consisted of steroids and azathioprine. A total of 186 transplants were performed during this period.

2. Era II–January 1984 to December 1989. The powerful new drug, cyclosporin A (CsA) was introduced and used on all transplant patients to prevent graft rejection, in addition to steroids and azathioprine. OKT3 also was available to treat acute rejections. A total of 137 transplants were performed during this time period.

3. Era III–January 1990 to December 1992. A total of 89 transplants were performed during this time period. The same immunosuppressive regimen as Era II was used.

4. Era IV–January 1993 to December 1993. A total of 21 transplants were done this past year. The same immunosuppressive regimen as Era II and III was used.

Patient and graft survival rates for each era were calculated by statistical analysis using the Kaplan-Meier method for estimating survival. Graft loss was defined as the earliest return to maintenance dialysis, retransplantation, or death and all causes of death were included in the analysis.

Results

The number of kidney transplants performed each year since the premier transplantation in 1969 and the source of donor

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kidneys are shown (Fig 1). Only living-related donor (LRD) kidney transplants were performed in 1969 and 1970. Most of the donor organs came from cadavers (CAD), with a total of 344 cadaver– versus 88 living–related donor kidneys. The patients' ages ranged from 3.5 years to 70 years and 58% were men and 42% were women. The majority of the patient population was Asian (Table 1). Most of these patients had ABO blood type A and were non-diabetic. Some of the common causes of renal failure for our population are listed (Table 2).

The overall patient survival rates were stratified by era. Prior to 1984, prednisone and azathioprine, or *conventional therapy* were used for immunosuppression. After 1984, CsA was added to the immunosuppressive regimen. The overall patient survival rates have improved with each era (Fig 2). The one-year patient survival now is about 97%.

The overall kidney graft survival rates also were stratified (Fig 3). The one-year kidney graft survival in the pre-CsA era was only 45%; now it exceeds 85%.

Both the patient and kidney graft survival rates were better for patients with a living-related donor (LRD) as compared to a cadaver donor (Fig 4 to 7). The current one-year patient survival with an LRD is 100% versus 97% with a CAD. The current one-year kidney graft survival with an LRD is 100% versus 84% with a CAD.

The UNOS Scientific Renal Transplant Registry also provided data based on 41,240 renal transplants performed at 237 U.S. transplant centers between October 1987 and November 1992.[8] These national statistics were compared to Hawaii's: The national overall one-year patient and kidney graft survival rates for cadaver transplants were 93% and 73%, respectively; compared to our most recent results of 95% and 85%, respectively.

The UNOS Scientific Renal Transplant Registry also provided a "1991 Report of Center–Specific Graft and Patient Survival Rates".[9] This report was the first attempt to determine center–specific kidney transplant survival rates for all kidney transplant programs in the United States. In this report, UNOS provided graft and patient survival rates for patients who received a kidney transplant from October 1, 1987 to December 31, 1989. The report analyzed 19,990 kidney transplants performed at 219 separate U.S. transplant programs during this time. In this report, our one-year patient survival of 93% and one-year graft survival of 83% were equivalent to or better than the UNOS national averages (Table 3). The results compare very favorably with those of larger centers in California.

In 1993, 21 kidney transplants were performed in Hawaii: 17 patients received cadaveric organs and 4 received organs from living-related donors. All of the patients have survived to date. Twenty of 21 patients currently have functioning grafts for an overall graft survival rate of 95%. Stratifying the data based on organ source reveals that 100% of the LRD grafts are still functioning and 94% of the CAD organs (16/17) are still functioning.

Discussion

Since the first kidney transplant was performed in Hawaii, kidney transplantation has become the treatment of choice for selected patients with end-stage renal failure. As the sole transplant center for Hawaii, St. Francis Medical Center continues to address the needs of patients with end-stage renal disease. In this retrospective review, the lessons learned over the past 25 years have been tremendous. This retrospective analysis will reflect past accomplishments, compare our current results with those of other centers in the country, and offer a glimpse into the future of kidney transplantation for patients in Hawaii.

As the overall patient and graft survival rates have improved over the years, a milestone improvement seems to be that of better immunosuppression. The survival data improved dramatically after 1984 with the introduction of CsA. This new immunosuppressive regimen presumably allowed for a lower incidence of graft loss from rejection. Although not included in our data, during this period other centers have noted a lower incidence of infection from the lower use of nonspecific immunosuppressive drugs such as prednisone and azathioprine.[7] This might help explain our improved one-year patient survival now at 96% and one-year graft survival now at 85%. Although it is not clear in the data, probably other factors contributed to this improvement including the increased experience of the transplant team, improved ancillary support, better intensive care management, and newer antibiotics such as ganciclovir for treatment of severe CMV infections.

The living-related donor kidney transplants continue to do much better than the cadaveric transplants in long-term graft survival. This is true in all other reports because a living-related donor allows for better HLA matching and shorter ischemic times, thereby avoiding preservation injury from acute tubular necrosis (ATN).

Retrospective reviews and comparison reports are important both to show where we have been and where we could be headed in the future. Data from UNOS compiling national statistics and large center reports have been most helpful.[8,9] In the past, our program had been criticized for its geographic isolation and small size, and it was unfairly assumed that our results would not be as good as those of larger centers. However, our one-year patient survival is equivalent to the national average and our one-year kidney graft survival exceeds the national average. As compared to larger programs in California, our results clearly speak for themselves. This should be very reassuring to the people of Hawaii who rely on St. Francis Medical Center exclusively for their transplantation needs.

Briefly, over the past 25 years, both hemodialysis and renal transplantation have advanced to the point where patients with end-stage renal disease can be managed with good long-term success rates. Recent data indicate that patient survival after transplantation is far superior to that of dialysis. In addition, kidney transplantation continues to be a more cost-effective treatment than dialysis. Perhaps more important, quality of life after successful transplantation is markedly better than dialysis. Thus, in 1994 all patients with end-stage renal disease should be considered as transplant candidates. The only absolute contraindications are active infection, active intravenous drug abuse, positive HIV status, and systemic malignancy. Relative contraindications include hepatitis, history of poor compliance

with medications, or advanced systemic diseases. As the technical aspects of renal transplantation have been perfected, patients in either age extreme or more advanced disease processes have been accepted as candidates.

Preoperative evaluation.—An extensive evaluation of all patients referred for transplantation is performed, including a detailed history and physical exam, routine laboratory studies, chest radiograph, electrocardiogram, blood and human leukocyte antigen (HLA) typing and viral serology. Certain candidates might require more extensive preoperative evaluation such as diabetic patients or patients with potential cardiac and/or pulmonary diseases. Patients older than 65 years constitute an increasingly larger group in the population in general and in those requiring dialysis or transplantation in particular. Careful evaluation of this group must be considered. Once a patient has been accepted for kidney transplantation, donor status is evaluated. Living-related donors are preferred because of the improved survival rates, ability to schedule cases electively, and the shortage of cadaver organs. If no living donor is available, patients are then placed on the cadaver donor waiting list.

Perioperative care.—Current preservation techniques allow kidney storage for up to 72 hours with good success rates. Cold–storage time still is minimized, however, to reduce the incidence of delayed graft function. For this reason, once the cadaver kidney is procured, the recipient is admitted and transplanted as quickly as possible. HLA and blood typing of the donor are performed and preliminary cross matches are done using recipient serum. Once this matching is completed, the kidneys are assigned to the 2 recipients with a negative cross match and the highest number of points according to the allocation system developed by UNOS. This includes the degree of HLA antigen match, length of waiting time, and panel–reactive antibody (PRA). The recipient is admitted to the hospital on an urgent basis; chest radiograph, electrocardiogram, and routine preoperative laboratory tests are performed and a final crossmatch is done. If needed, the recipient is dialyzed prior to surgery. Transplantation occurs within 12 to 24 hours of hospital admission.

Operative procedure.—A central venous pressure monitor is routinely placed in all recipients in order to manage preoperative and postoperative fluids. A Foley catheter is inserted preoperatively and immunosuppressive medications and antibiotics are administered prior to the beginning of the actual surgery. The technical approach to kidney transplantation has remained the same since the procedure was first successfully performed in 1954.

Briefly, a left or right lower-quadrant incision is made and the iliac vessels are dissected free extraperitoneally. The renal artery and vein from the donor kidney are anastamosed to the patient's iliac artery and vein, respectively. Revascularization is performed as quickly as possible to minimize ischemia time to the kidney. Before unclamping the revascularized kidney, the patient is fluid–resuscitated to maintain a systolic blood pressure of 140 mm Hg and central venous pressure to 12 mm Hg.

Table 1 Patient Demographics

Race	Percent
Asian	48.0
White	30.0
Filipino	17.0
Polynesian	4.1
Black	0.6
Hispanic	0.3

ABO Blood Type	Number (Percent)
O	141 (35.0)
A	166 (41.0)
B	64 (16.0)
AB	33 (8.0)
Data Unavailable	2 (0.2)
Total	405 (100.0)

Renal Disease	Number (Percent)
Diabetes Mellitis	37 (9.1)
Non-Diabetic	368 (90.9)
Total	405 (100.0)

Table 2 Causes of Renal Failure

Primary Diagnosis	Number (Percent)
Chronic Glomerulonephritis	220 (51.3)
Diabetes Mellitus	40 (9.3)
Systemic Lupus	36 (8.4)
Polycystic Kidney	22 (5.1)
Pyelonephritis	5 (1.2)

Table 3 Overall Actual Survival Rates from Oct 1, 1987 to Dec 31,1989

	UNOS	Hawaii	CPMC*	UCSF**
Number of Kidney Transplants with Follow-up	19,588	54	344	521
1-Year Graft Survival (Percent)	80	83	80	77
Number of Kidney Transplants with Follow-up	18,930	54	342	518
1-Year Patient Survival (Percent)	93	93	93	93

* California Pacific Medical Center, San Francisco
** University of California, San Francisco

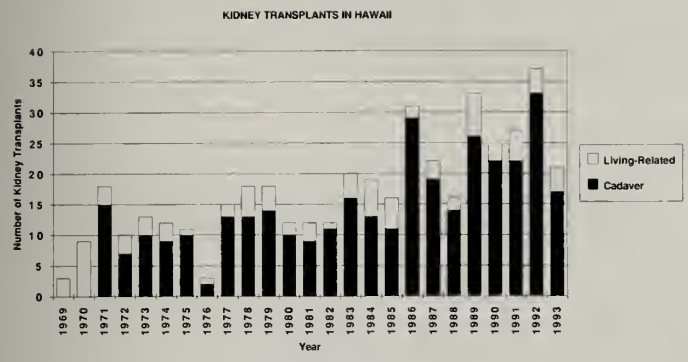


Figure 1.—A breakdown of 433 kidney transplants performed at St. Francis Medical Center by year and donor source.

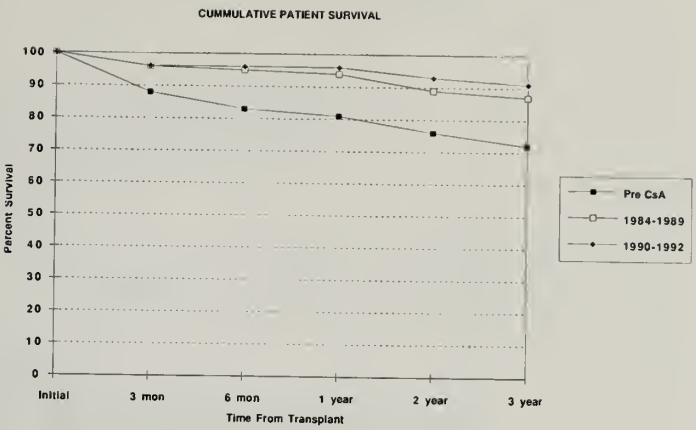


Figure 2.—Overall patient survival rates for recipients of kidney transplants at St. Francis Medical Center. The different eras include Pre CsA (1969 to 1983) and Post CsA (1984 to 1989 and 1990 to 1992).

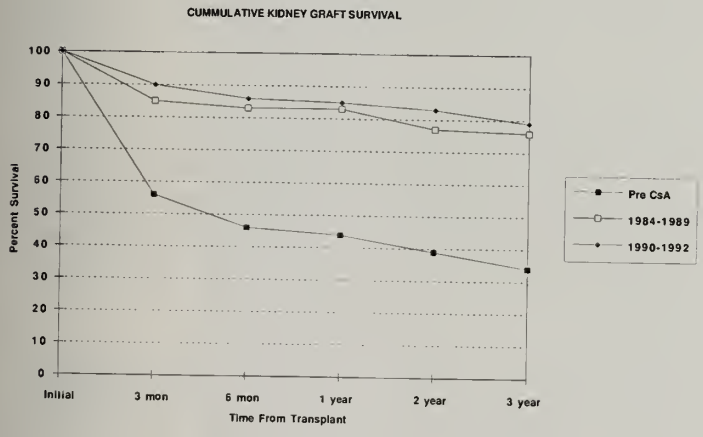


Figure 3.—Overall graft survival rates for recipients of kidney transplants at St. Francis Medical Center.

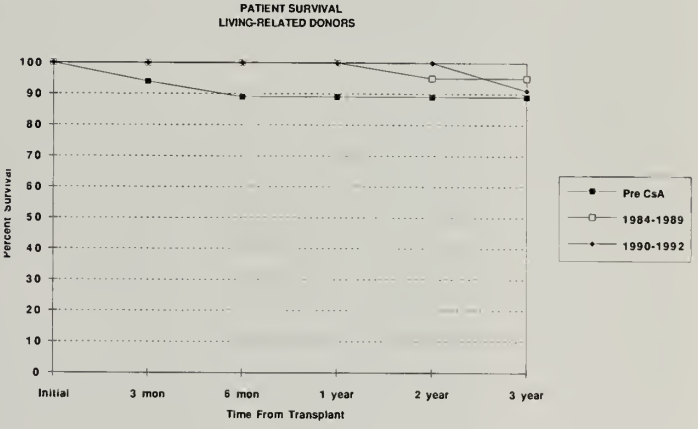


Figure 4.—Patient survival rates for recipients with a living-related donor kidney transplant.

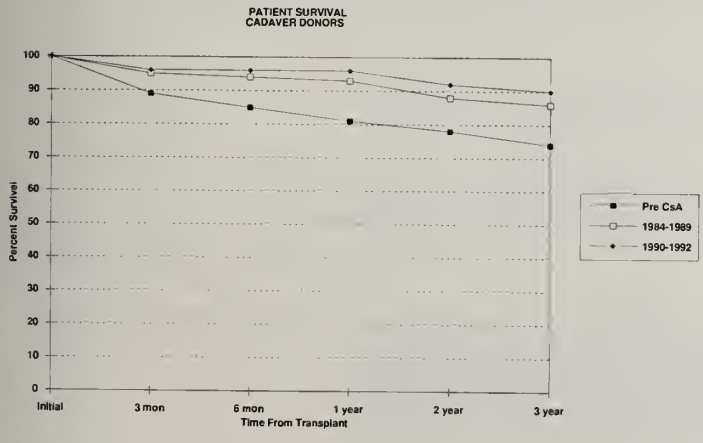


Figure 5.—Patient survival rates for recipients with a cadaver donor kidney.

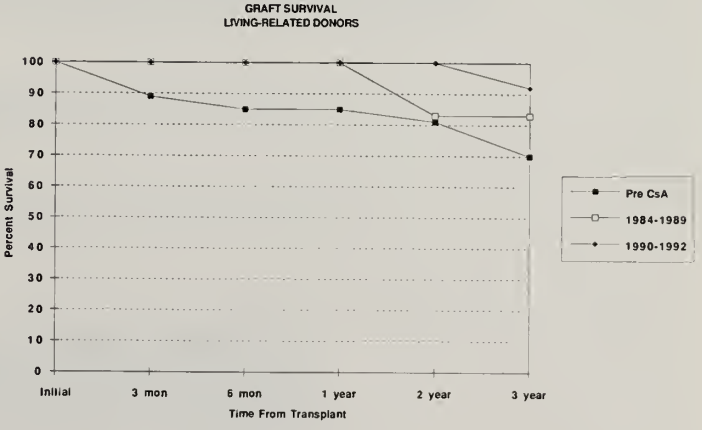


Figure 6.—Graft survival rates for recipients of a living-related donor kidney transplant.

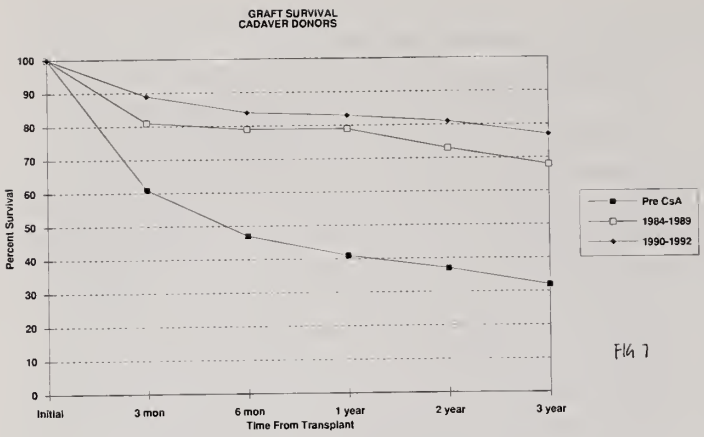


Figure 7.—Graft survival rates for recipients of a cadaver kidney transplant.

Furosemide (Lasix) and mannitol are administered as needed. The ureter is then implanted into the bladder via one of several techniques including the posterior Leadbetter-Politano or the Litch technique.

Postoperative care.—All patients require support in the intensive care unit during the first 24 to 48 hours. Most patients are extubated immediately after completion of the procedure, the fluid and electrolyte status are carefully monitored, and the hourly urine output is recorded and replaced cc for cc during the first 24 to 48 hours. After the first 24 hours, volume replacement is gradually decreased until maintenance replacement levels are reached. Patients with delayed graft function require special attention. Inadequate fluid resuscitation can result in acute tubular necrosis (ATN); overly aggressive fluid replacement can result in pulmonary edema or congestive heart failure.

Medications.—Standard postoperative medications include immunosuppression; the current regimen includes prednisone, azathioprine (Imuran) and CsA in all patients. In addition, OKT3 or ATGAM immunotherapy can be used in cadaver recipients with delayed graft function. These drugs are standard and have been described elsewhere. Other standard medications include H2 blockers and trimethoprim-sulfamethoxazole (Bactrim) to prevent *pneumocystis carinii* and to decrease the incidence of urinary tract infection. Prophylactic antibiotics, CMV prophylaxis and occasionally fluconazol for fungal prophylaxis are used for postoperative care.

Early complications.—Delayed graft function from a preservation injury, ATN, or rejection can occur. A rapid diagnosis using ultrasound or renal scan needs to be done to rule out any technical problems. General complications might occur as with all other surgical procedures. Wound complication such as hematoma, seromas, and infections are of significant concern since these patients are immunosuppressed. Wound complication rates are less than 2%. The most devastating early postoperative complication is bleeding or thrombosis which can present with a sudden onset of anuria. Urologic complications including ureter disruption, urinary leaks and distal ureter stenosis with obstruction can be seen. And as in all organ transplants, acute rejection can occur at any time within the first 3 to 6 months. Chronic rejection and recurrence of original kidney disease also can occur. A kidney biopsy is frequently required to define the cause of a late rise in the serum creatinine level and to direct treatment as needed.

Conclusions

Kidney transplantation has evolved into a treatment of choice for selected patients with end-stage renal disease. With improvements in patient management, HLA matching, and immunosuppressive protocols, the future of renal transplantation will include high risk groups such as the very young or the elderly. It is imperative that all patients with end-stage renal disease be given the option of kidney transplantation. As will be discussed later in this issue of the *Journal*, organ donation remains the major obstacle in kidney and solid organ transplantation. In Hawaii, there are more than 100 patients awaiting kidney transplant. All health professionals can make a difference by selecting and referring appropriate recipients and referring appropriate donors. This *gift of life* must be available to the people of Hawaii.

Acknowledgements

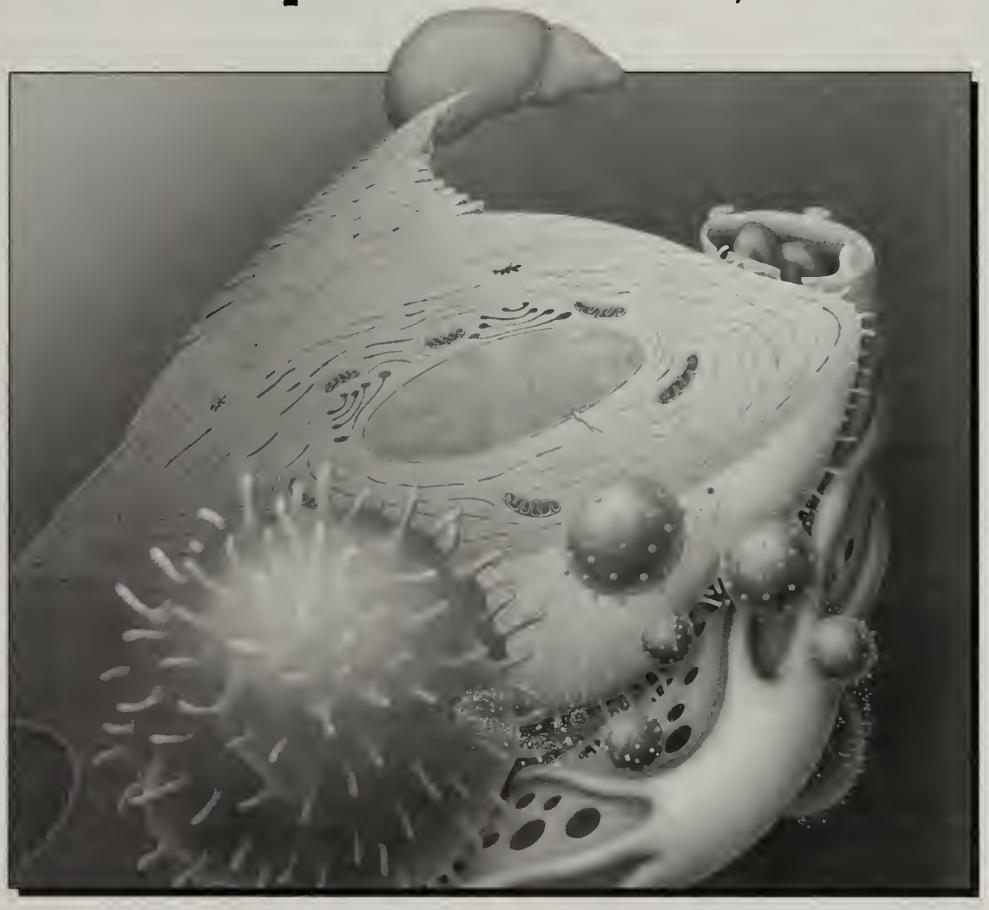
As with any large clinical endeavor, numerous individuals from all specialties must work together to make the vision possible. We owe special thanks to all the nephrologists in Hawaii for their excellent care of patients with end-stage renal disease. Also, the staff of St. Francis Medical Center has been instrumental to our success.

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and
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INTRON® A
Interferon alfa-2b recombinant
For Injection

BRIEF SUMMARY

INDICATIONS AND USAGE

Chronic Hepatitis Non-A, Non-B/C (NANB/C) INTRON A Interferon alfa-2b, recombinant for Injection is indicated for the treatment of chronic hepatitis Non-A, Non-B/C (NANB/C) in patients 18 years of age or older with compensated liver disease who have a history of blood or blood product exposure and/or are HCV antibody positive. Studies in these patients demonstrated that INTRON A therapy can produce clinically meaningful effects on this disease, manifested by normalization of serum alanine aminotransferase (ALT) and reduction in liver necrosis and degeneration.

A liver biopsy should be performed to establish the diagnosis of chronic hepatitis. Patients should be tested for the presence of antibody to HCV. Patients with other causes of chronic hepatitis, including autoimmune hepatitis, should be excluded. Prior to initiation of INTRON A therapy, the physician should establish that the patient has compensated liver disease. The following patient entrance criteria for compensated liver disease were used in the clinical studies and should be considered before INTRON A treatment of patients with chronic hepatitis NANB/C:

- No history of hepatic encephalopathy, variceal bleeding, ascites, or other clinical signs of decompensation

• Bilirubin	≤2 mg/dL
• Albumin	Stable and within normal limits
• Prothrombin Time	<3 seconds prolonged
• WBC	≥3000/mm³
• Platelets	≥70,000/mm³

Serum creatinine should be normal or near normal.

Prior to initiation of INTRON A therapy, CBC and platelet counts should be evaluated in order to establish baselines for monitoring potential toxicity. These tests should be repeated at weeks 1 and 2 following initiation of INTRON A therapy, and monthly thereafter. Serum ALT should be evaluated after 2, 16, and 24 weeks of therapy to assess response to treatment (see **DOSAGE AND ADMINISTRATION**).

Patients with preexisting thyroid abnormalities may be treated if thyroid stimulating hormone (TSH) levels can be maintained in the normal range by medication. TSH levels must be within normal limits upon initiation of INTRON A treatment and TSH testing should be repeated at 3 and 6 months (see **PRECAUTIONS – Laboratory Tests**).

Chronic Hepatitis B INTRON A Interferon alfa-2b, recombinant for Injection is indicated for the treatment of chronic hepatitis B in patients 18 years of age or older with compensated liver disease and HBV replication. Patients must be serum HBsAg positive for at least 6 months and have HBV replication (serum HBeAg positive) with elevated serum ALT. Studies in these patients demonstrated that INTRON A therapy can produce virologic remission of this disease (loss of serum HBeAg), and normalization of serum aminotransferases. INTRON A therapy resulted in the loss of serum HBsAg in some responding patients.

Prior to initiation of INTRON A therapy, it is recommended that a liver biopsy be performed to establish the presence of chronic hepatitis and the extent of liver damage. The physician should establish that the patient has compensated liver disease. The following patient entrance criteria for compensated liver disease were used in the clinical studies and should be considered before INTRON A treatment of patients with chronic hepatitis B:

- No history of hepatic encephalopathy, variceal bleeding, ascites, or other signs of clinical decompensation

• Bilirubin	Normal
• Albumin	Stable and within normal limits
• Prothrombin Time	<3 seconds prolonged
• WBC	≥4000/mm³
• Platelets	≥100,000/mm³

Patients with causes of chronic hepatitis other than chronic hepatitis B or chronic hepatitis NANB/C should not be treated with INTRON A Interferon alfa-2b, recombinant for Injection. CBC and platelet counts should be evaluated prior to initiation of INTRON A therapy in order to establish baselines for monitoring potential toxicity. These tests should be repeated at treatment weeks 1, 2, 4, 8, 12, and 16. Liver function tests, including serum ALT, albumin and bilirubin, should be evaluated at treatment weeks 1, 2, 4, 8, 12, and 16. HBeAg, HBsAg, and ALT should be evaluated at the end of therapy, as well as 3 and 6 months posttherapy, since patients may become virologic responders during the 6 month period following the end of treatment. In clinical studies, 39% (15/38) of responding patients lost HBeAg 1 to 6 months following the end of INTRON A therapy. Of responding patients who lost HBsAg, 58% (7/12) did so 1 to 6 months posttreatment.

A transient increase in ALT ≥2 times baseline value (flare) can occur during INTRON A therapy for chronic hepatitis B. In clinical trials, this flare generally occurred 8 to 12 weeks after initiation of therapy and was more frequent in responders (63%, 24/38) than in nonresponders (27%, 13/48). However, elevations in bilirubin ≥3 mg/dL occurred infrequently (2%, 2/86) during therapy. When ALT flare occurs, in general, INTRON A therapy should be continued unless signs and symptoms of liver failure are observed. During ALT flare, clinical symptomatology and liver function tests including ALT, prothrombin time, alkaline phosphatase, albumin, and bilirubin, should be monitored at approximately 2 week intervals (see **WARNINGS**).

DOSAGE AND ADMINISTRATION

Chronic Hepatitis Non-A, Non-B/C (NANB/C) The recommended dosage of INTRON A Interferon alfa-2b, recombinant for Injection for the treatment of chronic hepatitis NANB/C is 3 million IU three times a week (TIW) administered subcutaneously or intramuscularly.

Normalization of serum alanine aminotransferase (ALT) may occur in some patients as early as two weeks after initiation of treatment; however, current experience suggests that patients responding to INTRON A therapy with a reduction in serum ALT should complete 6 months (24 weeks) of treatment. The optimal dose and duration of therapy are currently under investigation.

In clinical trials, 54% (51/95) of the patients at a dose of 3 million IU TIW responded with a reduction in serum ALT after 6 months of INTRON A therapy. Since most of these patients (49/51) responded within the first 16 weeks of treatment, consideration could be given to discontinuing INTRON A therapy in patients who fail to respond after 16 weeks. The effect of dose escalation in these patients is under investigation.

If severe adverse reactions develop during INTRON A treatment, the dose should be modified (50% reduction) or therapy should be temporarily discontinued until the adverse reactions abate. If intolerance persists after dose adjustment, INTRON A therapy should be discontinued.

Patients who relapse following INTRON A therapy may be retreated with the same dosage regimen to which they had previously responded.

Chronic Hepatitis B The recommended dosage of INTRON A Interferon alfa-2b, recombinant for Injection for the treatment of chronic hepatitis B is 30 to 35 million IU per week, administered subcutaneously or intramuscularly either as 5 million IU daily (QD), or 10 million IU three times a week (TIW), for 16 weeks.

If severe adverse reactions or laboratory abnormalities develop during INTRON A therapy the dose should be modified (50% reduction), or discontinued if appropriate, until the adverse reactions abate. If intolerance persists after dose adjustment, INTRON A therapy should be discontinued.

For patients with decreases in granulocyte or platelet counts, the following guidelines for dose modification were used in the clinical trials:

INTRON A Dose	*Granulocyte Count*	*Platelet Count*
Reduce 50%	<750/mm³	<50,000/mm³
Interrupt	<500/mm³	<30,000/mm³

INTRON A therapy was resumed at up to 100% of the initial dose when granulocyte and/or platelet counts returned to normal or baseline values.

At the discretion of the physician, the patient may self-administer the medication. (See illustrated **PATIENT INFORMATION SHEET** for instructions.)

Preparation and Administration of INTRON A Interferon alfa-2b, recombinant for Injection

Reconstitution of lyophilized INTRON A Interferon alfa-2b, recombinant for Injection Inject the amount of Diluent for INTRON A Interferon alfa-2b, recombinant for Injection (bacteriostatic water for injection) stated in the appropriate chart below (diluent is supplied in either a vial or syringe, see **HOW SUPPLIED** below), into the INTRON A vial. Swirl gently to hasten complete dissolution of the powder. The appropriate INTRON A dose should then be withdrawn and injected intramuscularly or subcutaneously. (See **PATIENT INFORMATION SHEET** for detailed instructions.)

After preparation and administration of the INTRON A injection, it is essential to follow the procedure for proper disposal of syringes and needles. (See **PATIENT INFORMATION SHEET** for detailed instructions.)

Chronic Hepatitis Non-A, Non-B/C

Vial Strength	mL Diluent	Final Concentration
3 million IU	1	3 million IU/mL
†18 million IU multidose	3.8	6 million IU/mL

†This is a multidose vial to deliver 18 million IU of INTRON A Interferon alfa-2b, recombinant for Injection when reconstituted with 3.8 mL of the diluent provided.

Chronic Hepatitis B

Vial Strength	mL Diluent	Final Concentration
5 million IU	1	5 million IU/mL
10 million IU	1	10 million IU/mL

Stability INTRON A Interferon alfa-2b, recombinant for Injection provided as lyophilized powder in vials ranging from 3 to 50 million IU per vial, is stable at 45°C (113°F) for up to 7 days. After reconstitution with Diluent for INTRON A Interferon alfa-2b, recombinant for Injection (bacteriostatic water for injection) the solution is stable for one month at 2° to 8°C (36° to 46°F). The reconstituted solution is clear and colorless to light yellow.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. INTRON A Interferon alfa-2b, recombinant for Injection may be administered using either sterilized glass or plastic disposable syringes.

CONTRAINDICATIONS

INTRON A Interferon alfa-2b, recombinant for Injection is contraindicated in patients with a history of hypersensitivity to interferon alfa or any component of the injection.

WARNINGS

General Moderate to severe adverse experiences may require modification of the patient's dosage regimen, or in some cases termination of INTRON A therapy. Because of the fever and other "flu-like" symptoms associated with INTRON A administration, it should be used cautiously in patients with debilitating medical conditions, such as those with a history of pulmonary disease (eg, chronic obstructive pulmonary disease), or diabetes mellitus prone to ketoacidosis. Caution should also be observed in patients with coagulation disorders (eg, thrombophlebitis, pulmonary embolism) or severe myelosuppression.

Patients with platelet counts of less than 50,000/mm³ should not be administered INTRON A Interferon alfa-2b, recombinant for Injection intramuscularly, but instead by subcutaneous administration.

INTRON A therapy should be used cautiously in patients with a history of cardiovascular disease such as unstable angina or uncontrolled congestive heart failure. Those patients with a recent history of myocardial infarction and/or previous or current arrhythmic disorder who require INTRON A therapy should be closely monitored (see **Laboratory Tests**). Cardiovascular adverse experiences, which include hypotension, arrhythmia, or tachycardia of 150 beats per minute or greater, and transient reversible cardiomyopathy have been observed in some INTRON A treated patients. Transient reversible cardiomyopathy was reported in approximately 2% of the AIDS-Related Kaposi's Sarcoma patients treated with INTRON A Interferon alfa-2b, recombinant for Injection. The incidence of these complications in patients with preexisting heart disease is unknown. Hypotension may occur during INTRON A administration, or up to two days posttherapy, and may require supportive therapy including fluid replacement to maintain intravascular volume. Supraventricular arrhythmias occurred rarely and appeared to be correlated with preexisting conditions and prior therapy with cardiotoxic agents. These adverse experiences were controlled by modifying the dose or discontinuing treatment, but may require specific additional therapy.

Patients with a preexisting psychiatric condition, especially depression, or a history of severe psychiatric disorder should not be treated with INTRON A Interferon alfa-2b, recombinant for Injection.[1] INTRON A therapy should be discontinued for any patient developing severe depression or other psychiatric disorder during treatment. Central nervous system effects manifested by depression, confusion and other alterations of mental status have been observed in some INTRON A treated patients, and suicidal ideation and attempted suicide have been observed rarely. These adverse effects have occurred in patients treated with recommended doses as well as in patients treated with higher INTRON A doses. More significant obtundation and coma have also been observed in some patients, usually elderly, treated at higher doses. While these effects are usually rapidly reversible upon discontinuation of therapy, full resolution of symptoms has taken up to three weeks in a few severe episodes. Narcotics, hypnotics, or sedatives may be used concurrently with caution and patients should be closely monitored until the adverse effects have resolved.

Patients with preexisting thyroid abnormalities whose thyroid function cannot be maintained in the normal range by medication should not be treated with INTRON A Interferon alfa-2b, recombinant for Injection. Therapy should be discontinued for patients developing thyroid abnormalities during treatment whose thyroid function cannot be normalized by medication.

Hepatotoxicity, including fatality, has been observed rarely in INTRON A treated patients. Any patient developing liver function abnormalities during treatment should be monitored closely and if appropriate, treatment should be discontinued.

Chronic Hepatitis Non-A, Non-B/C (NANB/C) and Chronic Hepatitis B Patients with decompensated liver disease, autoimmune hepatitis or a history of autoimmune disease, and patients who are immunosuppressed transplant recipients should not be treated with INTRON A Interferon alfa-2b, recombinant for Injection. There are reports of worsening liver disease, including jaundice, hepatic encephalopathy, hepatic failure and death following INTRON A therapy in such patients. Therapy should be discontinued for any patient developing signs and symptoms of liver failure.

Chronic hepatitis B patients with evidence of decreasing hepatic synthetic functions, such as decreasing albumin levels or prolongation of prothrombin time, may be at increased risk of clinical decompensation in association with a flare of aminotransferases during INTRON A treatment. In considering these patients for INTRON A therapy, the potential risks must be evaluated against the potential benefits of treatment.

PRECAUTIONS

General Acute serious hypersensitivity reactions (eg, urticaria, angioedema, bronchoconstriction, anaphylaxis) have been observed rarely in INTRON A treated patients; if such an acute reaction develops, the drug should be discontinued immediately and appropriate medical therapy instituted. Transient rashes have occurred in some patients following injection, but have not necessitated treatment interruption.

While fever may be related to the flu-like syndrome reported commonly in patients treated with interferon, other causes of persistent fever should be ruled out.

There have been reports of interferon exacerbating preexisting psoriasis; therefore, INTRON A therapy should be used in these patients only if the potential benefit justifies the potential risk.

Variations in dosage, routes of administration, and adverse reactions exist among different brands of interferon. Therefore, do not use different brands of interferon in any single treatment regimen.

Drug Interactions Interactions between INTRON A Interferon alfa-2b, recombinant for Injection and other drugs have not been fully evaluated. Caution should be exercised when administering INTRON A therapy in combination with other potentially myelosuppressive agents such as zidovudine.

Laboratory Tests In addition to those tests normally required for monitoring patients, the following laboratory tests are recommended for all patients on INTRON A therapy, prior to beginning treatment and then periodically thereafter.

- Standard hematologic tests — including hemoglobin, complete and differential white blood cell counts and platelet count.
- Blood chemistries — electrolytes, liver function tests, and TSH.

Those patients who have preexisting cardiac abnormalities and/or are in advanced stages of cancer, should have electrocardiograms taken prior to and during the course of treatment.

Mild to moderate leukopenia and elevated serum liver enzyme (SGOT) levels have been reported with intralesional administration of INTRON A Interferon alfa-2b, recombinant for Injection (see **ADVERSE REACTIONS** section); therefore, the monitoring of these laboratory parameters should be considered.

Baseline chest X-rays are suggested and should be repeated if clinically indicated.

For specific recommendations in chronic hepatitis NANB/C and chronic hepatitis B, see **INDICATIONS AND USAGE** section.

Carcinogenesis, Mutagenesis, Impairment of Fertility Studies with INTRON A Interferon alfa-2b, recombinant for Injection have not been performed to determine carcinogenicity.

Interferon may impair fertility. In studies of interferon administration in nonhuman primates, menstrual cycle abnormalities have been observed. Decreases in serum estradiol and progesterone concentrations have been reported in women treated with human leukocyte interferon.[2] Therefore, fertile women should not receive INTRON A therapy unless they are using effective contraception during the therapy period. INTRON A therapy should be used with caution in fertile men.

Mutagenicity studies with INTRON A Interferon alfa-2b, recombinant for Injection revealed no adverse findings.

Studies in mice, rats, and monkeys receiving INTRON A injections for up to one month have revealed no evidence of toxicity. However, due to the known species-specificity of interferon, the effects in animals are unlikely to be predictive of those in man.

Pregnancy Category C INTRON A Interferon alfa-2b, recombinant for Injection has been shown to have abortifacient effects in *Macaca mulatta* (rhesus monkeys) in all dose groups studied (7.5 million, 15 million, and 30 million IU/kg), although it was only statistically significant *versus* control at the mid and high dose groups (corresponding to 90 and 180 times the intramuscular or subcutaneous dose of 2 million IU/m2). There are no adequate and well controlled studies in pregnant women. INTRON A therapy should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers It is not known whether this drug is excreted in human milk. However, studies in mice have shown that mouse interferons are excreted into the milk. Because of the potential for serious adverse reactions from the drug in nursing infants, a decision should be made whether to discontinue nursing or to discontinue INTRON A therapy, taking into account the importance of the drug to the mother.

Pediatric Use Safety and effectiveness have not been established in patients below the age of 18 years.

ADVERSE REACTIONS

Chronic Hepatitis Non-A, Non-B/C (NANB/C) In patients with chronic hepatitis NANB/C, alopecia, injection site reactions, rash, depression, and irritability apparently increased in incidence with continued treatment; residual mild alopecia persisted posttreatment.

Infrequently, patients receiving INTRON A therapy for chronic hepatitis NANB/C developed thyroid abnormalities, either hypothyroid or hyperthyroid. In clinical trials <1% (4/426) developed thyroid abnormalities. The abnormalities were controlled by conventional therapy for thyroid dysfunction. The mechanism by which INTRON A Interferon alfa-2b, recombinant for Injection may alter thyroid status is unknown. Prior to initiation of INTRON A therapy for the treatment of chronic hepatitis NANB/C, serum TSH should be evaluated. Patients developing symptoms consistent with possible thyroid dysfunction during the course of INTRON A therapy should have their thyroid function evaluated and appropriate treatment instituted. INTRON A treatment may be continued if TSH levels can be maintained in the normal range by medication. Discontinuation of INTRON A therapy has not always reversed thyroid dysfunction occurring during treatment.

Chronic Hepatitis B In patients with chronic hepatitis B, some type of adverse reaction occurred in 98% of the 101 patients treated at 5 million IU, QD and 90% of the 78 patients treated at 10 million IU, TIW. Most of these adverse reactions were mild to moderate in severity, were manageable, and were reversible following the end of therapy.

Adverse reactions classified as severe (causing a significant interference with normal daily activities or clinical state) were reported in 21% to 44% of patients. The severe adverse reactions reported most frequently were the flu-like symptoms of fever (28%), fatigue (15%), headache (5%), myalgia (4%), and rigors (4%), and other severe flu-like symptoms which occurred in 1% to 3% of patients. Other severe adverse reactions occurring in more than one patient were alopecia (8%), anorexia (6%), depression (3%), nausea (3%), and vomiting (2%).

To manage side effects, the dose was reduced, or INTRON A therapy was interrupted in 25% to 38% of patients. Five percent of patients discontinued treatment due to adverse experiences.

ABNORMAL LABORATORY TEST VALUES BY INDICATION

Dosing Regimens

Percentage (%) of Patients

	Chronic Hepatitis NANB/C	Chronic Hepatitis B	
	3 million IU TIW	*5 million IU QD*	*10 million IU TIW*
Laboratory Tests	N = 87-158	N = 96-101	N = 75-103
Hemoglobin	15%	32%*	23%*
White Blood Cell Count	18%	68%†	34%†
Platelet Count	9%	12%‡	5%‡
Serum Creatinine	2%	3%	0%
Alkaline Phosphatase	3%	8%	4%
Serum Urea Nitrogen	1%	—	—
Granulocyte Count			
• Total	37%§	71%§	61%§
• 1000 – <1500/mm³	—	31%	32%
• 750 – <1000/mm³	—	23%	18%
• 500 – <750/mm³	—	15%	9%
• <500/mm³	—	2%	2%

*Decrease of ≥2 g/dL
†Decrease to <3000/mm³
‡Decrease to <70,000/mm³
§Neutrophils plus bands

General The adverse experiences listed in the following table were reported to be possibly or probably related to INTRON A therapy during clinical trials. Most of these adverse reactions were mild to moderate in severity and were manageable. Some were transient and most diminished with continued therapy.

The most frequently reported adverse reactions were flu-like symptoms, particularly fever, headache, chills, myalgia, and fatigue. More severe toxicities are observed generally at higher doses and may be difficult for patients to tolerate.

TREATMENT-RELATED ADVERSE EXPERIENCES BY INDICATION

Dosing Regimens

*Percentage (%) of Patients**

	CHRONIC HEPATITIS NANB/C	CHRONIC HEPATITIS B	
	3 million IU TIW	*5 million IU QD*	*10 million IU TIW*
ADVERSE EXPERIENCE	N = 159	N = 101	N = 78
Application-Site Disorders			
injection site inflammation	7	3	—
other (<5%)	injection site bleeding, injection site pain, injection site reaction		
Blood Disorders (<5%)	granulocytopenia, hemolytic anemia		
Body as a Whole			
facial edema	1	3	1
weight decrease	<1	2	5
other (<5%)	lymphadenopathy, peripheral edema, thirst		
Cardiovascular System Disorders (<5%)	extrasystoles, hypotension, palpitations, tachycardia		
Endocrine System Disorders (<5%)	aggravation of diabetes mellitus, thyroid disorder		
Flu-like Symptoms			
fever	43	66	86
headache	43	61	44
myalgia	42	59	40
fatigue	19	75	69
increased sweating	3	1	1
asthenia	24	5	15
rigors	27	38	42
arthralgia	19	19	8
dizziness	9	13	10
influenza-like symptoms	9	5	—
back pain	3	—	—
dry mouth	4	6	5
chest pain	1	4	—
malaise	3	9	6
other (<5%)	chest pain substernal, rhinitis, rhinorrhea		
Gastrointestinal System Disorders			
diarrhea	13	19	8
anorexia	13	43	53
nausea	23	50	33
taste alteration	1	10	—
abdominal pain	6	5	4
loose stools	3	2	—
vomiting	3	7	10
constipation	<1	5	—
gingivitis	—	1	—
dyspepsia	3	3	8
other (<5%)	abdominal distention, eructation, flatulence, gastric ulcer, gingival bleeding, gum hyperplasia, increased appetite, melena, stomatitis, stomatitis ulcerative, taste loss		
Liver and Biliary System Disorders (<5%)	jaundice, right upper quadrant pain and very rarely, hepatic encephalopathy, hepatic failure, and death		
Musculoskeletal System Disorders			
musculoskeletal pain	—	9	1
other (<5%)	arthrosis, leg cramps		
Nervous System and Psychiatric Disorders			
depression	8	17	6
paresthesia	1	6	3
impaired concentration	4	8	5
confusion	1	—	—
irritability	4	16	12
somnolence	1	14	9
anxiety	1	2	—
insomnia	4	11	6
nervousness	—	3	—
decreased libido	1	5	1
other (<5%)	abnormal coordination, abnormal dreaming, abnormal gait, aggressive reaction, agitation, dysphonia, emotional lability, feeling of ebriety, hot flashes, hyperesthesia, hyperkinesia, hypertonia, hypokinesia, paronina, personality disorder, syncope, tinnitus, vertigo		
Reproductive System Disorders (<5%)	amenorrhea, impotence, menorrhagia, uterine bleeding		
Resistance Mechanism Disorders			
herpes simplex	—	5	—
other (<5%)	conjunctivitis		
Respiratory System Disorders			
dyspnea	<1	5	—
coughing	<1	4	—
pharyngitis	1	7	1
nonproductive coughing	—	1	—
nasal congestion	—	4	—
other (<5%)	epistaxis, sneezing		
Skin and Appendages Disorders			
dermatitis	—	1	—
alopecia	17	26	38
pruritus	6	6	4
rash	6	8	1
dry skin	<1	3	—
other (<5%)	acne, cyanosis of the hand, cold and clammy skin, dermatitis lichenoides, erythema, increased hair growth, melanosis, nail disorders, photosensitivity, purpura, urticaria, vitiligo		
Urinary System Disorders (<5%)	increased BUN, micturition frequency, nocturia, polyuria		
Vision Disorders (<5%)	abnormal vision, blurred vision, diplopia, dry eyes, eye pain, photophobia		

*Dash (—) indicates not reported

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U.S. Patents 4,530,901 & 4,496,537
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Allogeneic and Autologous Bone Marrow Transplant Experiences in Hawaii

Livingston M.F. Wong MD, Robert T.S. Jim MD, Kevin K. Loh MD,
Robert W. Wilkinson MD, Clayton D.K. Chong MD

Allogeneic bone marrow transplant (BMT) was first performed successfully at St. Francis Medical Center in 1978. Since that time, 91 BMTs have been performed for aplastic anemia, leukemia, lymphoma, and Stage II, III and IV breast cancers. This article will explain the methods, complications and results of BMT in Hawaii.

Methods

Bone marrow transplant experience in Hawaii has been that of purged or non-purged autologous and allogeneic. Autologous is defined as marrow taken from the patient. It is purged with chemotherapeutic agents or monoclonal antibodies if marrow is involved with tumor, or non-purged if marrow is not involved with tumor. The marrow is stored after being frozen with liquid nitrogen. The patient is treated with total body irradiation, fractionated 225 rads for 5 doses and/or with chemotherapeutic agents such as cyclophamide (CTX), etoposide (VP 16), busulfan (BU), and carmustine (BCNU) in escalated doses (4 to 10 times normal doses). After chemotherapy and/or radiation, the marrow is thawed and re-infused into the patient through a central venous catheter.

Allogeneic transplant is performed between a donor and recipient. The healthy donor usually is an HLA-identical sibling, although HLA-identical unrelated donors recently have been used. The 6th chromosome harboring the HLA locus must be identical or with no more than 1 mismatch in the 6 antigens. The ABO blood type locus in the 9th chromosome can be crossed and a mismatch also may result in similar good results. In Hawaii, a donor is found by HLA typing of family members or through local and national registries. The donor must be free of hepatitis, AIDS, and in good physical condition. The recipient must be young and otherwise healthy with no infectious disease, diabetes, cardiac disease or severe respiratory problems. Once a donor/recipient pair is identified, the recipient undergoes total body irradiation of fractionated 225 rads for 5 doses, and/or receives chemotherapy with CTX,VP 16, BU, or BCNU. Following this, the patient is allowed to rest for 48 hours. The donor marrow is then harvested and infused into the recipient within 24 hours. The amount of marrow given is 3×10^8 of nucleated cells per kilogram of recipient weight.

After infusion of marrow, the recipient is maintained in a special room with Hepafilter air conditioning and 10 mm of positive pressure. The patient is maintained on a specific diet consisting of no fresh fruits or vegetables, and all meals are thoroughly cooked to avoid this source of infection. Specific oral antibiotics and antifungal medications are given prophylactically. Visitors must comply with strict rules for washing their hands and must wear masks and gloves to avoid contaminating these immunosuppressed patients. Hospitalization for 30 to 500 days generally is needed to reconstitute marrow and obtain a WBC > 4,000 cells/mm^3. The patient is given granulocyte-colony stimulating factor (G-CSF) or granulocyte and macrophage-colony stimulating factor (GM-CSF) in order to stimulate WBC production. RBCs are slower to reconstitute and platelets may require 3 to 6 months before the count becomes normal.

Although the WBC count may become normal, the function of these cells can be depressed for as long as a year. These patients will require monthly intravenous immunoglobulin and cyclosporine for 6 months. If all goes well, at the end of the 6 months, these patients are on no medication and can behave almost normally. At the end of 1 year, the majority who survive in a disease-free state are as healthy as any in their age group.

Results

Sixty-seven allogeneic bone marrow transplants have been performed at St. Francis Medical Center (SFMC) for various stages of leukemia, aplastic anemia, and lymphoma since 1978 and the majority of these were for advanced disease. When broken down by age groups, stage of disease, and type of disease, the numbers of patients for each category would be a relatively small 3 to 5 for each category. Comparisons for such small numbers would not be meaningful. At present, 23 are alive, in complete remission and disease-free: One patient is

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alive with recurrent disease; of the 23 who are alive, 19 are back to full employment and activity, 2 are at home and 2 remain hospitalized.

Sixteen autologous harvests have been performed at SFMC, followed by 11 transfusions: Five of these patients are in remission and disease-free and 6 have died. Four autologous purged BMTs have been performed; 2 have survived in complete remission (disease-free). The first was done in conjunction with Kapioloni Medical Center for Women and Children.

Discussion

Autologous BMT, purged or non-purged, has been performed in Hawaii for: Leukemia in remission, lymphoma with minimal or no bone involvement, and breast cancer as an adjutant therapy in those patients with 10 or more positive nodes or metastatic disease. Allogeneic BMT is performed for aplastic anemia, acute leukemias, chronic leukemias, and lymphoma. Currently, there appears to be no benefit of allogeneic BMT in solid tumors.

The results from our center are comparable to many U.S. centers. The success rate for bone marrow transplant is quite variable and depends on: 1) age, 2) disease type: acute myelogenous leukemia (AML), chronic myelogenous leukemia (CML), acute lymphoblastic leukemia (ALL), Lymphoma - B-cell, T-cell, Hodgkin's or non-Hodgkin's, 3) stage of disease (first remission, relapse, second remission, second relapse, accelerated disease or blastic crisis), and 4) overall physical condition of the patient.

1) Age. Allogeneic BMTs generally are limited to the younger patient. Those patients under 20 years of age have the best results. Intermediate results occur in 20 to 30-year olds, and BMT is contraindicated in those over 45 years of age because of the high morbidity and mortality.

2) Type of disease. Aplastic anemia has excellent results bordering on 75% complete remission after BMT. Good results are obtained from AML and CML, with long-term disease-free states. BMT for ALL results in high recurrence rates and lower long-term disease-free states. The outcome for lymphoma depends largely on the extent of disease and the presence of chromosomal abnormalities. Extensive disease with chromosomal abnormalities invariably yields poor long-term disease-free states.

3) State of disease. Optimal results for allogeneic BMT occur when done early after diagnosis when the disease is in first remission. Transplantation done in blastic crisis yields 10% or less long-term disease-free remission.

4) Patient condition. The overall physical condition of the patient is important to the success of BMT. Patients with other diseases such as diabetes, cardiac problems, cerebrovascular disease, hepatitis, and AIDS are disqualified from allogeneic BMT because of the associated high morbidity and mortality.

Thus, the ideal candidate for BMT would be an otherwise healthy 20 year-old with AML in first remission. This would yield the lowest mortality and 50% to 60% long-term disease-free state. Likewise, a 30-year old with CML who is transplanted before the third year of diagnosis and not in accelerated phase or blastic crisis also would be a good candidate.

Complications from BMT are numerous; the more frequent ones are listed here:

1. Graft versus host disease (GVHD). This occurs when the graft views the body as foreign and attempts to reject either the body as a whole or specific organs. This process is a function of activated T-lymphocytes which attack the liver, gastrointestinal tract, lungs, and skin. GVHD can be fatal even in HLA-identical donors and mortality can be as high as 10% and varies with age. Younger patients experience GVHD less than older patients. GVHD also brings about GVL (Graft versus Leukemia), a beneficial response. Radiation and chemotherapy are a Log kill of leukemic cells. The probability of all tumor being eliminated by chemotherapy or radiation is small. With GVL, in all likelihood, the graft will be able to eradicate any remaining leukemic cells.

2. Pharyngitis. Severe pharyngitis is caused by high-dose chemotherapy and total body irradiation. This pharyngitis lasts for 2 to 3 weeks and keeps the patient from being able to swallow, drink, or eat; total parenteral nutrition is needed during this period.

3. Infections. Bacterial infections are common early complications; however, long-term antibiotic therapy for these may result in later fungal infections. Viral infection such as cytomegalovirus, adenovirus, and herpes zoster tend to occur years later. Appropriate therapy is needed to prevent and treat each of the specific organisms.

4. Rejection. Rejection of the graft can occur causing prolonged aplasia and accompanying complications. A second graft could be required to achieve good engraftment.

5. Sterility. High-dose chemotherapy and/or fractionated Total Body Irradiation will cause sterility, although male and female hormones will be produced in the usual amounts.

6. Drug effects. Use of immunosuppressive medications can result in many untoward effects. Use of steroids can result in Cushingoid appearance, peptic ulcer disease, and cataracts. Cyclosporine in high doses can result in seizures, hypertension, headaches, and nephrotoxicity.

7. Other complications. There are many other complications that occur less frequently: Hypothyroidism, veno-occlusive disease, de novo tumors such as lymphoma and leukemias, and interstitial pneumonia.

The program in Hawaii has been approved for Southwest Oncology Group (SWOG), Eastern Cooperative Oncology Group (ECOG), and Pediatric Oncology Group (POG) protocols. Site visits have been performed by SWOG and ECOG, and they have provided full approval for allogeneic and autologous BMT under research protocol.

Under the leadership of Y.K. Paik MD, this program has developed a National Marrow Donor Pool (NMDP) of local donors. Donor marrow has been collected in Hawaii and sent to Canada, Washington, Tennessee, and California.

➤ *Continued on page 84*

News and Notes Henry Yokoyama MD

Life in these parts

Paul Harvey on KHVH radio reports: "We are now sending a new unmanned, *unwomaned* probe to the moon."

A physician father's anguish

Nine-month old **Chad Kurahara** developed fever, rash, red eyes and chapped lips just before Christmas. His dad, pediatric rheumatologist **David Kurahara,** who had studied Kawasaki Syndrome for the past 7 years, said, "When he got the red eyes, I knew it was Kawasaki. When you realize it is Kawasaki and you don't know if he has aneurysms or whether he's going to develop them, that's pretty scary." (Ed. We pray it had a happy ending)

Gang Tattoos

Sgt **Rodney Goo,** "gang detail's boss", was one of 10 Americans awarded the National Child Labor Committee's 1994 Lewis Hine Award. Goo's 7 officer school-education detail started a pilot program to remove gang tattoos from youngsters wanting to quit gangs. (**Norman Goldstein** is doing it at no charge so long as patients sign a contract promising they will stay out of gangs and off drugs.)

Healthy genes?

Ben and **Rosaline Kanealii,** both pretty pure Hawaiians in their mid-70s are our precious patients. They had 15 children, but 2 died in infancy and a third died in an accident, early in childhood. So their remaining 12 children beget 55 grandchildren, 68 great grandchildren and 4 great great grandchildren—all doing well.

Iniki aftermath: Wilcox Memorial Health Center hopes to consolidate the 80 physicians on Kauai. The Center purchased the Garden Island Medical Group (with its 11 physicians) in January and is continuing discussions with the Kauai Medical Group (with it's 47 physicians). The remaining 22 physicians are mostly independent and a few are associated with HMSA's Kuhio Medical Clinic in Lihue.



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Arnold Siemsen's heritage

St. Francis Medical Center has renamed it's newly renovated Renal Institute of the Pacific, the Siemsen Dialysis Center in honor of Arnold who established the dialysis center in 1968 and was medical director until his retirement in 1990.

Our peripatetic neurosurgeon **Ralph Cloward,** on a recent trip to Australia, picked up the following poem entitled: **The Bush Doc**

A ringer* rode up to a pub,
A raging thirst was his.
He tied up his horse, lifted it's tail
and under it planted a kiss.

The Doc had seen some strange
things
In this land of sweat and sin.
But what he saw that ringer* do
Well, it fairly got him in!

For this was an act that intrigued
the doc,
Who was ever alert for new tips.
"Er, excuse me" he said,
"Why did you do that?"
The ringer* replied, "Sore lips."

"Does that heal them?",
the doctor inquired,
His professional interest
quickening.
The ringer* grinned at him,
"No", he drawled, "that's only to
Stop me from licken 'em."

*Ringer: Australian for cowboy.

Professional moves

October: Straub announced its newest physicians and their clinic assignments:
Internist **Boyuan Cao**—Urgent care, Kaneohe
Internist **Thomas Cheek**—Medicine, Hawaii Kai
FP **Florante DeLeon**—Urgent care, Westridge
Psychiatrist **John Guo**—King Street
Neurosurgeon **Yoshio Hosobuchi**—King Street
FP **Kenneth Kau**—King Street
Internist **Robert Koerner**—Urgent care, Hawaii Kai
Oncologist/Hematologist **Randal Liu**—King Street
General and vascular surgeon **Elna Masuda**—King Street
Internist **Antonius Mulia**—Pali Momi
FP **Sasha Myers**—King Street
Internist **Robert Westlake**—Mililani

FP **Barbara Ferguson** opened the Naalehu Clinic, West Hawaii. Neurologist **Thomas Drazin** opened at Queen's POB II.



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December: Internist **Francis Ikezaki** retired as of Dec 30 with the message, "Fond aloha and good health to all my loyal patients." Internist **Russell Tom** opened at Kapiolani Medical Center at Pali Momi. Internist **Mark Kimbrell** opened his practice at 328 Uluniu Street, Suite 103, Kailua. **Stephen De Nigris** became Kauai's first gastroenterologist.

Miscellany

A Scot lad met a Scot lass and offered to walk her home. "Shall we go through the woods instead of the village?" he suggested. "No!" she replied firmly. "Is it the gleam in my eyes?" "No, it is the tilt of your kilt," she said. (As told by our favorite humorist **Roger Brault**)

Laughter the best medicine

(Excerpts from *Readers Digest*)

A psychologist was giving a lecture at a men's club. "How many of you make love to your wife every night?" A few raised their hands. "Twice a week?" More hands. "Once a month?" Still more. "Only once a year?" A man in the back row jumped up and eagerly shouted, "Me!" "Why are you so cheerful?" the therapist asked. "Because tonight's the night!" (**Milton Berle**)

Psychiatrist's secretary: "There's a man in the waiting room who claims to be invisible." Psychiatrist: "Tell him I can't see him right now." (**Clifford Kuhu** MD)

Elected, appointed and honored

St. Francis Medical Center honored the following medical staff members: Distinguished Alumni Award **Richard Moore**; Accomplishment Award **William Dang Jr.**; Service Award **Herbert Y.H. Chinn**; Bioethics Award **S.Y. Tan**; Community Service Award **Ramon Sy**.

Hors de combat

In January, the AMA launched a $1.6 million print advertising campaign that asks, "Would you rather trust your life to an MD or an MBA?" AMA leaders fear that "giant profitseeking corporations" could come to dominate health care under the proposed Clinton Health Plan.

Physicians speak up

In a letter to the editor, retired thoracic surgeon **Paul Gebauer** pushes for legalized assisted death: "Suicide in any form is unwanted by doctors, legislators, everyone, and even by those who wish to or need to die. But it has been thrust upon them because it is the only way to circumvent a law which prohibits assisted death and compels doctors to do their duty furtively, or shirk it. There are times when a physician's job to relieve suffering and curtail useless living transcends life preservation. There are times when death should be provided, not abided."

Ronald J. Wong and **Vincent J. Nip,** in a letter to the editor, report that "the trauma service at the Queen's Medical Center admitted 85 gunshot injuries during a 2-year period Jan '92 to Dec '93. Excluding those treated and released from the ER, the average hospital cost of each admission, (minus surgeon and consultant fees) was more than $21,000 per patient. The opportunity for the Hawaii Legislature to enact tough gun control laws should not slip by. Private gun ownership carries substantial personal risk which far outweighs any benefits. There is growing medical evidence that restrictive gun legislation can reduce homicide and suicide rates." "In Washington DC, the enactment of a law barring the purchase, sale, transfer or possession of hand guns by civilians was followed by an abrupt decline in homicide and suicides." (*N Engl J Med,* Dec 91)

Potpourri

Larry Wong's repertoire:
Psychoceramics=crack pot
Honeymoon salad=Let us alone without dressing.

Health plans:
Kennedy Health Plan=Womb to tomb care
Clinton Health Plan=Erection to resurrection care.

Quotables

William Osler was the Leonardo Da Vinci of medicine. He's the last guy to know all you have to know. If he did not diagnose the condition, you didn't have it." (**John Towbridge,** associate clinical professor of medicine, U of Cal SF, Nov 5 '93, QMC Kam Auditorium)

Miscellany

One hot day, we were exploring the Scottish Highlands and stopped the car to let out our aging collie for fresh air. Tongue lolling, he lay panting on a grassy knoll, while my husband spread his map over the car's hood and, head in hands, proceeded to study it. Another car drove up. "Is he ill?" The driver asked in concern. "Can I help?" "Oh, no," I explained. "He's just getting old. He used to bound out of the car and jump all over me, ready for a romp in the grass." The stranger stared at me and hurriedly drove off. He hadn't seen our dog. (**Grace Parker,** *Readers Digest,* July '92)

National news

Abortion cost: The Clinton administration has decided that states must pay for abortions for low income women made pregnant by rape or incest. Medicaid had paid for such abortions for the last 12 years. But no longer.

Breast implants: In Jan. 1992, FDA Commissioner **David Kessler** had called for a moratorium on silicone breast implants. One year later, the AMA decided that there was no convincing evidence that breast implants posed serious medical problems and declared that women ought to be able to get them for cosmetic purposes once informed of the risks.

Elderly in HMOs: In the Reagan and Bush administrations, Medicare officials insisted that HMOs would raise the quality of care of the elderly by coordinating services and save money for the government. A new study by Mathematics Policy Research (a private consulting group) said the government paid 5.7% more for Medicare patients in HMOs than in the regular Medicare program. Clinton officials are now saying they will not prod elderly Medicare patients to join HMOs.

Physician groups support Clinton plan

While the 296,000 member AMA has misgivings about requiring employers to pay for health insurance, 10 other groups with more than 300,000 members are supporting the plan. The groups are: The American Academy of Family Physicians, American Academy of Pediatrics, American College of Obstetricians and Gynecologists, American College of Physicians, American College of Preventive Medicine, American Medical Women's Association, American Society of Internal Medicine, American Thoracic Society, National Hispanic Medical Association and the National Medical Association.

The Clinton Plan would make upper income retirees—starting at $90,000 for an individual and $115,000 for a couple—pay 75% of the costs of their Medicare Part B coverage instead of the 25%.

Medicaid would save $51 billion from 1995 to 2000 by phasing out payments to hospitals serving large numbers of poor, uninsured people. The rationale is that under universal coverage, the hospitals no longer will have to provide so much charity care.

The government would raise $7.3 billion in extra Medicare payroll taxes by requiring all state and local government workers to pay the tax.

Three million disabled people would qualify for new home and community-based care. The state-run programs would be phased in over several years and provide services worth $11,000 a year on average. Severely mentally retarded persons living outside institutions could get help worth more than $31,000 each.

Research reports

Michael Aldous et al of the University of Washington studied 4,019 first-born infants of white women ages 35 to 39 and 410 first-born infants of white women age 40 and older. They found that white women age 40 and older were 2.3 times more likely to deliver infants weighing less than 5.6 lbs than women ages 20 to 24.

Researchers from UC at San Diego looked at the coffee and milk drinking habits of 980 menopausal women ages 50 to 98 and measured the bone density of their hips and spines.

Women who drank 2 or more cups of coffee

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and a glass of milk a day had 6.5% higher bone density than women who drank no milk.

Depression and drug therapy

(Lecture by VP Daniel Casey, Prof of Neurology, Oregon Med School on 2/12/93 at KMC. Notes therefrom)

Depression: A common disorder afflicting 3.7% to 6.7% of the population and resulting in substantial morbidity and mortality.

Morbidity: a) diminished function at work and with family; b) resorts to self-medication with drugs and alcohol.

Mortality: 14/100,000 suicides. Most 2º depression.

Depression is a preventable disorder and is life threatening.

Three out of four prescriptions for antidepressants are written by non-psychiatrists ie family practitioners, internists and gynecologists.

Criteria for major depression: (5 out of 9 including 1 or 2) 1. Depressed mood 2. Loss of interest or pleasure 3. Weight loss or gain: more than 5% 4. Insomnia or hypersomnia 5. Psychotic agitation or retardation 6. Worthless or guilty feeling 7. Fatigue or loss of energy 8. Diminished mental concentration 9. Recurrent thoughts of death or suicide. Note: Most depressed patients will not say they are depressed.

Pathophysiology of depression: Deficiency of amine neurotransmitters

a. Norepinephrine
b. Serotonin

Drug	Serotonin	Norepinephrine
Paroxetine	4+	0
Sertaline	4+	0
Fluoxetine	3+	0
Amitryptyline	2+	+
Trazodone	+	0
Imipramine	+	+
Naprotyline	0	2+
Nortriptyline	+	3+
Desipramine	+	4+

• No evidence that combining drugs increases benefits, but it does increase the side effects.

Comparison of Drugs: Equal antidepressant efficacy. Equal onset of action (2 to 3 weeks). All drugs work equally well.

• SSRIs have more favorable side-effect and overdose-profiles as compared to tricyclics.

Tricyclic overdose: 10 day-plus dose is toxic (cardiac). 20 to 30x daily dose causes cardiac toxicity.

SSRIs: No toxicity even with 50 to 150x daily dose. Kinder to patients re side effects.

• Sertaline affinity to 5HT uptake sites versus binding to various receptors: 5HT=4+ Alpha NE=± $5HT_2$=±

Prozac: Sexual dysfunction: 18%; soft stools and nausea 25%.

SSRIs lower serotonin uptake pump and thereby raise serotonin level.

Tricyclics lower: a. Serotonin uptake pump b. Norepinephrine pump c. Blocks choline and alpha receptors.

• Placebo has benefit: positive expectation of people works to peak at 2 weeks.

SSRIs and Tricyclics: 40% efficacy at 2 weeks; 80% efficacy at 8 weeks.

• Relapse rates lessened by staying on therapy.

Medicine's funny bone

(Excerpts from *Medical World News* July 1986)

An old psychiatrist and a young psychiatrist leave the office together at the end of a long day. The older man is dapper and has not a hair out of place. The younger doctor is totally unkempt and frazzled.

"How can you be in such great shape after a whole day of listening to people spill out their deepest, most gut-wrenching problems?" the young guy asks.

"So who listens?" replies the veteran.

"Surgeons do it.
Internists talk about it.
Radiologists just look at the pictures."

"Principles of dermatology:
If it's wet, dry it.
If it's dry, wet it.
If neither of these works, use steroids.
If steroids don't work, do a biopsy."

Condensed excerpts from "Stitches"

(The *Journal of Medical Humor*, January 1994)

When I was an intern rotating through urology, I remember the following conversation: I asked this Scottish lady: "Does your urine burn?" Lady: "I don't know, doctor, I've never tried to light it." (Dennis Gardiner, Nepean, Ont.)

A disgruntled 15 year old came into the emergency room having cut her finger on the meat-slicer at her part-time job at a delicatessen.

In order to take the young woman's mind off her plight, as I was sewing the wound, I asked her, "So, what were you making when you cut your finger?" "About $5.25 an hour," came the serious reply. (Chris O'Connor, Toronto)

This could take some time

"The identity of the headless corpse found in a tree in Woodland near Liskeard will not be positively known until dental records have been checked." *(Western Morning News)*

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Cardiac Transplantation in Hawaii

Carlos E. Moreno-Cabral MD, J. Haunani Nakaahiki RN

Clinical cardiac transplantation was successfully introduced 26 years ago, and from an initial experimental status, it has moved forward to become an accepted and well-established treatment modality for end-stage cardiac disease. The first cardiac transplant operation in Hawaii was performed in March 1987; the patient lived for 1 year. A total of 20 heart transplant operations have been performed in 19 patients at St. Francis Medical Center in Honolulu. There has been only one hospital death, and our current one-year survival is 77%, which is similar to national statistics. Our longest survivor is now more than 6 years following transplantation. The incidence of rejection episodes and infectious complications is comparable to other studies.

Introduction

Following successful animal experiments in the late 1950s, cardiac transplantation was applied clinically for the first time in 1967. This event led to an unwarranted rush of transplant operations worldwide with resulting poor outcomes. It was through the meticulous efforts of the Stanford group with steadily improving results in the 1970s that transplantation of the heart regained prominence as a valuable procedure in the treatment of end-stage cardiac disease. With the introduction of cyclosporine as part of the immunosuppressive regimen in 1980, a new higher level of success was achieved that produced the appearance of many new transplant programs. The surgical techniques and immunosuppression protocols have become standardized with expected good results. This report reviews the experience with heart transplantation in Hawaii since its inception in 1987.

Patients and methods

After months of preparation, the first cardiac transplant operation in Hawaii was performed in March 1987[1]. Since that time, a total of 20 operations have been performed in 19 patients. The selection of patients was based on standard criteria: All were in advanced cardiac failure and had no other alternative treatment. There were 17 men and 2 women who were aged 23 to 60 years old (mean 40). Seventy-four percent of these patients (14/19) had idiopathic dilated cardiomyopathy. Five patients had undergone previous cardiac surgery; one patient had 3 previous coronary bypass operations and the placement of an AICD. For patients who were discharged from the hospital, the length of stay varied between 14 and 74 days, with an average of 24 days. The operations were performed between March 1987 and May 1993, and the follow up was completed in December 1993. A profile of the recipient patients is seen in Table 1.

Our immunosuppression regimen has been modeled after the Stanford University protocol and consisted of triple drug oral therapy (cyclosporine, azathioprine and prednisone) plus induction with the monoclonal antibody OKT3 for 14 days. All patients had routine surveillance cardiac biopsies weekly after transplantation for the first 6 weeks, biweekly for 2 months, and monthly until 6 months following the operation. Thereafter, they were biopsied every 3 months for life. Once a year, full cardiac catheterization and coronary angiography were obtained.

Rejection was diagnosed in asymptomatic patients on routine biopsy using standard criteria and on symptomatic patients by clinical diagnosis plus echocardiogram and confirmed by urgent biopsy. Treatment of moderate or severe rejection consisted of 3 consecutive daily doses of 1 gram of methyl-prednisolone. If this failed to clear the episode, a second course of methyl-prednisolone or a repeat course of OKT3 was given. In the case of humoral rejection, characterized by the absence of cellular infiltrates and severe cardiac failure, plasmapheresis or immunoadsorption columns (ProSorba®) were used. This consisted of daily treatments for 3 days, followed by 3 more treatments every other day. In patients who rejected several months after transplantation, the episode was treated with high dose oral steroids (prednisone 50 mg twice a day for 3 days) with tapering over 2 weeks.

Infection surveillance was very strict. All patients (recipients and donors) were screened for CMV IgM and IgG, hepatitis, toxoplasmosis and HIV. After transplantation, routine cultures of sputum and urine were obtained twice a week. Weekly specimens of urine, throat secretions, and blood were obtained for CMV cultures. Appropriate cultures were repeated when clinically indicated.

Donor management was directed by the transplant surgeons.

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Hemodynamic stability was emphasized with particular interest in maintaining adequate intravascular volume, minimal inoptropic support with no more than 5 mcg/Kg/min of dopamine and acceptable oxygenation.

Brain death in 14 of the 20 donors was caused by head trauma; 5 had spontaneous intracranial hemorrhage, and 1 had a malignant brain tumor (Table 2). Donor age varied from 14 to 50 years old with a mean of 28. There were 17 men and 3 women; adequate recipient=donor matching included blood type (Table 1) and body size, with discrepancies in body weight no larger than ± 20%, if possible. No prospective tissue typing or crossmatching was performed. Before final acceptance of a donor heart for transplantation, it was required to have had a stable hemodynamic course, a normal or acceptable LV function by echocardiogram, and satisfactory contractility by visual inspection after opening the chest. Pulmonary artery pressure and cardiac output measurements, via Swan Ganz catheter, were performed when clinically indicated. Cardiac catheterization and angiography were done if donors were older than 45 years of age, or if they had a history of hypertension, heavy smoking, or prior heart disease. Standard surgical techniques were used for organ procurement and graft implantation. All transplanted hearts were placed in an orthotopic position. None of the patients was mechanically assisted, either pulmonary or cardiac, at the time of transplantation. Three patients were hospitalized with moderate or severe congestive failure when donors became available. Another patient had been hospitalized for more than 2 months with refractory cardiac failure, requiring 3 weeks of intraaortic balloon (IABP) support, and complicated with a cerebrovascular accident. She recovered from this episode, was discharged home, and transplanted a few weeks later. All donors except 1 were from the Honolulu metropolitan area, and they were transferred to St. Francis Medical Center to decrease the ischemic time. One donor heart was procured in Maui and flown to Honolulu for transplantation.

Results

Survival/initial hospitalization. Operative mortality was 5%. Only 1 patient out of 19 died during the immediate postoperative period.

Long-term survival. The 1-year survival rate was 77%, at 3 years 70% of patients were alive, and 60% survived more than 5 years.

Functional results. All surviving patients except 1 became asymptomatic following transplantation. The patient who continued in failure was a very debilitated 60-year-old man who had 3 previous coronary bypass operations and was hospitalized with severe congestive heart failure and anasarca. He also had chronic pulmonary disease and following transplantation had a stormy course requiring re-exploration for bleeding, prolonged ventilatory support, and a tracheostomy. He was discharged after 73 days in functional class II. Currently more than 2 1/2 years following the operation, he still has moderate limitation in exercise tolerance. Ten of the 14 patients (71%) who survived more than 1 year were rehabilitated and went back to full- or part-time work, or full-time school. One patient retired voluntarily.

Cause of death. A total of 6 patients have died: One patient died during the initial hospitalization 4 days after the operation; 5 patients died 4 months to 26 months following transplantation. The only hospital death occurred in a 48-year-old woman who had early graft failure probably related to pulmonary hypertension (No. 2, Table 1).

Of the late deaths, 4 were due to rejection and 1 due to infection. The first transplant recipient died 12 months after transplantation from complications of rejection that resulted from non-compliance with the medical regimen. Severe rejection was the cause of death in 3 other patients; these occurred 7, 9, and 22 months following transplantation. The first of these patients (No. 13, Table 1) had an uncomplicated operation and was discharged after 21 days in the hospital. He subsequently had 3 episodes of rejection in the first 3 months, requiring intravenous methyl-prednisolone therapy. Seven months after the operation, he had an episode of upper respiratory infection and presented at another hospital with abdominal fullness and dyspnea. Work-up for intra-abdominal pathology delayed the diagnosis of rejection, and he presented to St. Francis Medical Center *in extremis* with cardiogenic shock. One gram of methyl-prednisolone was given at the other hospital before transfer. Total cardiopulmonary support (CPS ®) was provided, but it proved inadequate, with ongoing metabolic acidosis. The same day a donor heart became available and the patient was retransplanted, but could not be weaned from cardiopulmonary bypass and died. The second patient (No. 17, Table 1) had ongoing rejection since the transplant operation, and although clinically he did well for several weeks at a time, the protracted rejection which included alternating or combined humoral and cellular rejection, was never fully controlled despite multiple antirejection treatments. These included several courses of methyl-prednisolone, 3 courses of OKT3, 3 courses of plasmapheresis or immunoadsorption columns and a full course of total lymph node irradiation (80 cGy twice weekly for a total of 10 fractions or 800 cGy). He died 9 months after transplantation at home. The last of this group of patients (No. 11, Table 1) was admitted 26 months after transplantation with a severe episode of rejection and cardiogenic shock. He was placed on CPS 12 hours after admission, but continued deteriorating rapidly despite maximal support and died a few hours later. He is the only patient who has had documented severe 3-vessel coronary artery disease in the transplanted heart. This was known before death on his second-year routine coronary arteriogram, and confirmed at autopsy.

The patient who died of infection (No. 7, Table 1) had a prolonged re-admission to the hospital with disseminated CMV infection and an episode of severe rejection that was reversed with the help of CPS for 5 days. The ultimate cause of death was multiple organ failure from uncontrollable infection.

Morbidity

Infections. Infection episodes were relatively infrequent in our patients. Two episodes of successfully treated *pneumocystis carinii* pneumonia occurred in a patient 3 months and 11 months after transplant. One patient had disseminated CMV infection (previously discussed). Two other patients had systemic symp-

toms with elevated CMV titers and were treated with intravenous ganciclovir. Bacterial infections were seen infrequently and were never of life-threatening proportions. One episode of each of the following infections occurred at different occasions: Bacterial pneumonia, urinary tract infection, wound infection in a traumatic injury, and oral herpes. All of these episodes were adequately treated with the appropriate antibiotics.

Rejection. Of the 18 patients surviving the initial hospitalization, 13 patients (72%) suffered at least 1 episode of moderate acute cellular rejection requiring treatment during the first year. Of the remaining 5 patients, 2 rejected after 1 year, and 3 have never had episodes of rejection requiring therapy. As mentioned above, 3 patients had severe rejection that led to death, 2 within the first year, and 1 after 2 years. Humoral (vascular) rejection occurred in 3 patients at 2 weeks, 2 months, and 3 years following transplantation. These episodes were invariably severe and life-threatening with varying degrees of hemodynamic compromise. All 3 patients required admission to ICU and inotropic support, and 2 required IABP assistance. Treatment included high-dose methyl-prednisolone for 3 days and plasmapheresis and/or immunoadsorption columns. The initial episodes were reversed in all patients. One patient had recurrent rejection and eventually died of it (No. 17, Table 1. Discussed above). In the latest patient with humoral rejection, azathioprine was substituted with cyclophosphamide with good results. Graft atherosclerosis has been diagnosed by coronary angiography in 1 patient (2 years after transplantation) and confirmed as diffuse, severe 3-vessel involvement by autopsy after dying of rejection (See above). Another patient suffered an acute myocardial infarction several years after transplantation; there were EKG changes, but coronary angiography failed to reveal any obstructive lesions. Bradyarrhythmias occurred in 2 patients who responded adequately to oral theophylline. None of our patients has required implantation of a permanent pacemaker and none has developed malignant disease following transplantation.

Hospital cost

Information was available on the cost of the initial hospitalization of the last 9 transplant patients, all performed within the past 3 years. Excluding 2 patients, one with advanced debilitation who spent 2 1/2 months in the hospital following transplantation, and another patient who was hospitalized for 2 months before transplantation, the average hospital cost was $157,289. This reflects the expected current hospital cost for a relatively uncomplicated heart transplant operation excluding physician charges.

Discussion

Cardiac transplantation has achieved an important position in the therapy of incurable cardiac disease. Results have been consistently good since the advent of improved immunosuppressive methods. With the introduction of cyclosporine in 1980, the survival rates improved substantially from 63% to 80% at 1 year, and from 36% to 60% at 5 years.[2] The number of transplant centers and operations have increased remarkably in the past decade and the number of cardiac transplant operations worldwide increased from 700 in 1984 to 2,709 in 1992. A peak was reached in 1990 with a total of 3,289 operations.[3] Although the considerable increase in the number of operations is encouraging, the number of transplant operations remains limited by the availability of donors. Nearly 3,000 patients are waiting for donor hearts at any given time in the United States alone. Xenotransplantation will have to wait until greater advances in immunology take place, and it probably won't be a clinical reality within the next decade.

Selection criteria for recipients continue to evolve, however, the initial guidelines set by the Stanford group have remained mostly unchanged: The age limit is 60 years old, individualized consideration can be given to older patients if they are otherwise deemed good candidates. The oldest transplanted patient entered in the Registry of the International Society of Heart and Lung Transplantation was 75 years old[3] —newborns have been transplanted hours after birth. All candidates must have end-stage cardiac disease untreatable by other means with life expectancy measured in months, and a normal pulmonary vascular resistance (ideally < 3 Wood units). They should have normal or minimally affected kidney and liver function and have strong family support and good compliance, since the medication regimen, and infection and rejection surveillance are very stringent. Contraindications include any active infection, peptic ulcer disease, recent pulmonary embolism, current malignancy, insulin dependent diabetes mellitus and positive serology.

Operative mortality rates have remained steady at 8% to 10%[3]. We had a 5% mortality rate (1/19) and none of the last 17 patients has died during the initial hospitalization. Long-term survival rates are usually reported at yearly intervals with 1-, 5-, and 10-year survival rates used to compare results. Stanford reports an 80.7% and 59.7% 1- and 5-year survival rates for patients treated in the cyclosporine era (1980 to 1989)[2]. The same statistics are 79.1% and 67.8% reported by the Registry[3]. In the latter report, the 10-year survival rate was 55.8%. The survival rates at 1, 3, and 5-year intervals of 77%, 70%, and 60% in our program are similar to other reports.

It is unquestionable that cardiac transplantation has a profound effect in patients who are terminally ill and who would otherwise have a very limited life expectancy. Not only can this procedure add years to their lives, but, equally important, the majority of patients become fully rehabilitated and can enjoy productive lives. Seventy percent of our patients were able to go back to work or school. Similar functional results are reported from other institutions.[2]

In any organ transplantation, a narrow margin between infection and rejection is ever-present. Excessive immunosuppression will decrease the rejection rates, but it will increase the incidence and severity of infections. Deficient immunosuppression will result in fewer infection episodes, but the incidence of rejection will increase. Until better immunosuppressive drugs become available, we have to accept these potential complications and treat them with the best means available. Both infection and rejection remain the main causes of morbidity and mortality in transplant patients. As evidenced in our report, the majority of patients had at least one episode of rejection, and 5

Table 1 Characteristics of Transplant Recipients

No.	Age	Sex	Diagnosis	Blood Type Rec	Blood Type Donor	Previous Surgery	Length of Stay	Outcome
1	50	M	IDCM	A	O	—	23	Died 1 year
2	38	M	IDCM	B	O	—	18	Alive 6 years 4 months
3	48	F	IDCM	O	O	—	4	Died 4 days
4	23	M	IDCM	A	A	—	35	Alive 5 years 6 months
5	42	M	IDCM	A	O	—	24	Alive 5 years
6	40	M	IDCM	O	O	—	41	Alive 4 years 6 months
7	25	M	LVA	O	O	Aneur resect	18	Died 4 months
8	34	M	IDCM	A	O	—	21	Alive 3 years 9 months
9	23	M	IDCM	A	O	—	18	Alive 3 years 6 months
10	56	M	CAD	A	O	CABG	16	Alive 3 years 3 months
11	34	M	IDCM	A	A	—	17	Died 2 years 2 months
12	60	M	CAD	O	O	3 CABGs	74	Alive 2 years 8 months
13	32	M	IDCM	A	O	—	21	Died 7 month after retransplantation
14	56	M	IDCM	O	O	—	19	Alive 1 year 10 months
15	56	F	IDCM	B	O	—	18	Alive 1 year 6 months
16	32	M	AR	O	O	AVR	19	Alive 1 year 4 months
17	31	M	IDCM	B	O	—	14	Died 9 months
18	54	M	AR	O	O	AVR	24	Alive 13 months
19	37	M	IDCM	AB	A	—	16	Alive 7 months

IDCM=Idiopathic Dilated Cardiomyopathy, **LVA**=Left Ventricular Aneurysm, **CAD**=Coronary Artery Disease, **CABG**=Coronary Artery Bypass Grafting, **AR**=Aortic Regurgitation, **AVR**=Aortic Valve Replacement

of 6 deaths were caused by or associated with rejection episodes. Typically, cellular rejection is discovered by routine biopsy in patients who are asymptomatic. Treatment with short-term enhanced immunosuppression with high-dose steroids aborts the episode and no long-lasting heart damage is seen. Recently, more serious rejection events have been seen. These are humorally mediated and typically present with sudden congestive failure symptoms which rapidly may advance to cardiogenic shock. These episodes are clearly life-threatening and a very aggressive approach is needed to reverse these events. Three of our patients have had such complications. Emergency biopsy has revealed little or no cellular infiltrates and may show vasculitis. Severe cardiac dysfunction is evident by clinical symptoms and signs and echocardiogram usually confirms the degree of impairment of left ventricular contractility. All 3 patients required inotropic medications to sustain cardiac function: 2 of the patients required mechanical assistance with IABP, 1 of them on 2 different occasions. The biopsy has not always been helpful, but when the combination of clinical findings is seen, immediate treatment is given. We have reversed all such episodes with the combination of high dose methyl-prednisolone and treatment with plasmapheresis or immunoadsorption columns. The immunoadsorption columns are used to remove circulating immunoglobulins in a selective manner rather than exchanging

Table 2 Donors. Cause of Brain Death

Head Trauma	MVA	8
	GSW	5
	Fall	1
Intracranial Bleeding		5
Brain Tumor		1

MVA=Motor Vehicle accident
GSW=Gunshot Wound

the whole plasma volume as plasmapheresis does. This treatment modality has been used in the recent past, and there are no reports with large experiences available. We have shown that it is an effective way of treating this devastating complication. In one patient, we stopped the azathioprine and substituted it with cyclophosphamide which has more specific effect on the antibody production limb of the immune response. This change seems to have controlled the humoral rejection in a better way.

A serious problem in long-term survivors is the appearance of graft coronary atherosclerosis. Stanford reports a 25% incidence at 5 years,[2] and it seems to correlate with CMV infections. Currently, there is no effective way of preventing this complication. The only effective treatment once it is advanced is retransplantation. Fortunately, we have not seen this problem frequently in our patients. Only one patient has had significant coronary artery obstruction which had no clinical manifestations.

Infectious complications have not been a major problem in our patient population. It is well known that opportunistic infections, mostly fungal and viral, are prevalent in transplanted patients. With one exception, all infectious episodes have been adequately treated.

Cardiac transplantation is an expensive procedure. Nonetheless, studies have shown this operation to be cost-effective. It is clear that most patients with end-stage cardiac disease are disabled, many of them being unable to work with resultant loss of income, and others have repeated or prolonged hospitalizations with accumulating health care costs. A transplant operation often reverses this downhill trend and can return the patient to a functional status. The results are not optimal yet and further improvements are expected as more experience accumulates, but great advances have been made in the past 3 decades. This endeavor requires a monumental effort from different institutions and many individuals. The main reward that professionals involved in transplantation receive is seeing a patient recover from a devastating disease.

Addendum

Since the completion of this study, one more patient, our longest survivor (who lived more than 6 years) died in January 1994. The cause of death has not been determined, however his death does not alter the 1-year, 3-year or 5-year survival statistics.

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Allogenic and Autologous Bone Marrow Transplant Experiences in Hawaii

➤ *Continued from page 73*

The Hawaii BMT program also has been investigated by NMDP. Approval has been given for St. Francis Medical Center as one of 72 hospitals capable of performing unrelated allogeneic BMT transplants from the world's pool of potential donors.

Summary

Allogeneic and autologous bone marrow transplantation has been performed in Hawaii since 1978 for leukemia, lymphoma, aplastic anemia, and advanced breast cancer. The numbers for each group are relatively small and the disease stages are diverse. Our program has been recognized and approved by the various national organizations, and we hope to continue to provide this treatment alternative to appropriate candidates.

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Liver Transplantation in Hawaii

Linda L. Wong MD, Alan H.S. Cheung MD, Whitney M.L. Limm MD, Naoky C.S. Tsai MD*

The first liver transplant performed in Hawaii was on May 17, 1993 in a patient with end-stage liver disease caused by autoimmune hepatitis. Liver transplantation is a well-accepted treatment for end-stage liver disease with a 1-year patient survival of 80% to 85%. Early recognition of the appropriate candidate by primary care physicians and prompt referral to a liver transplant center are essential for optimal results. The indications, contraindications, organ procurement and allocation, complications, and results of liver transplantation are described. Finally, several controversial areas will be introduced, including liver transplant for alcoholic cirrhosis and hepatitis B, and use of transjugular intrahepatic portosystemic shunts (TIPS).

Case 1

In 1989 a 60-year-old woman who has a very distant history of breast cancer had a CT scan that noted a cirrhotic liver. A follow-up CT scan in 1990 showed the cirrhosis was unchanged. She had received no blood transfusions and was asymptomatic. In 1990, she developed intermittent mental slowness and fatigue. She was admitted in August 1992 for mental status changes, lethargy, and severe anemia. Her past medical history was significant only for a moderate amount of alcohol use, but none for more than a year.

Her physical examination was notable for mental slowness and encephalopathy, jaundice, scleral icterus, spider angiomata, and severe lower extremity edema. Her abdomen was distended with ascites and an umbilical hernia was present.

Her laboratory data was:

WBC: 5.2 x 10^9cells/mm^3 Hgb - 10.3 gm/dl; Hct 28.8%; Platelets 98K; Protime: 18.2 sec; PTT 41 sec; Albumin 2.5 gm/dl; Alk phos: 16.1 IU/l; Total Bilirubin: 7.6 mg/dl; AST: 91 IU/l; ALT: 37 IU/l; GGTP: 56 IU/l; Hep A,B,C; HIV: all negative; ANA titer 1:640; Antimitochondrial Ab<20; Alphafetoprotein 11.75.

Studies performed included CT scan and ultrasound of the abdomen which confirmed cirrhosis, splenomegaly, and patent vessels (portal vein, hepatic artery, hepatic veins, and vena cava).

In summary, she had end-stage liver disease probably from autoimmune hepatitis with manifestations of encephalopathy, ascites, malnutrition, and severe fatigue. She was evaluated by the members of the Liver Transplant Selection Committee at St. Francis Medical Center who agreed she was a suitable candidate for transplant; she was placed on the waiting list in April 1993.

On May 17, 1993, a suitable donor of identical blood type became available. The donor was hemodynamically stable and had good liver function prior to procurement. The donor procedure was done by the en-bloc technique, to include removal of the liver, pancreas and both kidneys. The donor organs were flushed with University of Wisconsin solution at 4°C. The pancreas was sent for use in Islet cell transplantation. The heart was procured by a separate heart team.

The liver recipient procedure began shortly thereafter. The cirrhotic liver was removed and the new liver was placed in the standard fashion using veno-venous bypass to maintain hemodynamic stability and prevent lower extremity swelling. The anastomoses included suprahepatic inferior vena cava (IVC), infrahepatic IVC, portal vein, hepatic artery, and bile duct. The entire procedure took 10 hours; cold ischemic time was 11 hours, and a total of 26 units of PRBCs were transfused.

Postoperatively, she maintained excellent liver allograft function. Her coagulopathy resolved (protime 11.3 sec., fibrinogen 458 mg/dl on the first post-operative day), she had no acidosis, and bile production was good. She also maintained good cardiovascular and renal function. She was given antilymphocyte globulin (ATGAM®) for induction therapy. Maintenance immunosuppression included prednisone, azathioprine, and cyclosporine. Her postoperative problems included febrile reactions to ATGAM®, and a mild rejection on the twelfth postoperative day which was treated with high-dose steroids. She was discharged on 21 days after the operation. She subsequently developed elevation of alkaline phosphatase and bilirubin, and cholangiograms suggested an extrinsic compression of the bile duct. She was found to have a mucocele of the cystic duct stump, which was drained intraoperatively. Her liver function tests returned to normal.

She is currently 6 months postop with continued good liver allograft function and no further rejection episodes. Her immunosuppression consists of prednisone and cyclosporine. She has gained weight (albumin 4.5 gm/dl), walks 3 miles each day, and performs household work.

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Discussion

Few medical discoveries have been as exciting as the development of liver transplantation. The first human liver transplant was performed in 1963 by Dr Thomas Starzl. His patient was a 3-year-old boy with liver failure caused by biliary atresia; he died intraoperatively from uncontrollable hemorrhage.[1] Liver transplantation has come a long way since then—with numerous advancements in preservation solutions, surgical techniques, and immunosuppression. Liver transplantation now has become an accepted treatment for end-stage liver disease—more than 2,900 liver transplants were performed in the United States in 1991, with one-year survival rates as high as 80% to 90%.

The above case illustrates the course of a fairly typical liver transplant. What follows is a discussion of liver transplantation to include indications/contraindications, the evaluation process, complications, and controversies.

Who needs a liver transplant?

There are 4 primary indications for liver transplant:

1. Irreversible advanced chronic liver disease
2. Neoplastic diseases
3. Metabolic liver diseases
4. Fulminant liver failure (usually from hepatitis B, autoimmune hepatitis or acetaminophen overdose)

Not all patients with the above-listed diseases will need a liver transplant; proper selection of patients and timing of surgery are essential. The patient should have advanced liver disease with complications such that liver transplant will improve survival and quality of life. General criteria for patient selection include:

1. Intractable ascites, not responsive to diuretic therapy
2. Uncontrolled variceal bleeding
3. Poorly controlled encephalopathy
4. Malnutrition
5. Fatigue, interfering with normal daily activities
6. Hepatorenal syndrome
7. Recurrent spontaneous bacterial peritonitis

Although the contraindications to liver transplant have become fewer with time, there are still 4 main contraindications:

1. Active sepsis outside the hepatobiliary tree
2. Malignancy outside the liver
3. Advanced cardiopulmonary disease
4. AIDS

Age, prior portacaval shunt, chronic alcoholism, and portal vein thrombosis are not absolute contraindications; however, these patients must be selected carefully. Advanced chronic renal failure may be a contraindication in certain scenarios, but a combined liver-kidney transplant can be performed.[2,3]

Who gets a liver transplant?

Before becoming a liver transplant candidate, the patient must be formally evaluated by a team of health professionals to include a transplant surgeon, hepatologist, anesthesiologist, nurses, and social workers. Multiple laboratory tests are obtained to assess the extent and etiology of liver failure. Serologic tests and tumor markers are also checked. An ultrasound examination and CT scan of the liver are used to look for tumors and determine vessel patency. All patients undergo cardiac evaluation with an EKG and echocardiogram and further testing is done for high risk patients. Psychosocial assessment is made to establish whether or not if the patient can adapt to the stresses of having a liver transplant, will be compliant with medications and postoperative care. Finally, the patient meets with a financial counselor. Members of the transplant selection committee will then meet to determine if a patient is an appropriate candidate.

How does a candidate get a liver?

When a patient is accepted as a candidate, he or she is placed on a waiting list. How a patient then gets a liver is largely regulated by a national organization called UNOS (United Network for Organ Sharing). It dictates the policies as to how donor organs are procured and distributed fairly. It oversees the actions of 261 transplant centers and 65 organ procurement organizations in order to distribute organs from nearly 4,300 cadaveric donors to the more than 22,000 patients waiting for transplants. This data includes all types of organs—most are waiting for kidneys and about 1,300 are waiting for liver transplants.

UNOS has divided the United States into 11 regions (Fig 1). When a donor liver becomes available, it is first used locally within the area of the organ procurement organization. If no suitable candidates are found, it is then offered within the region, and then nationally. The appropriate candidate for a donor liver is determined by the patient's size, blood type, time waiting on the list, and medical urgency status. Urgency status is the most important factor, and each patient is categorized into one of the 4 statuses listed.[3]

Status 1: Patient's level of functioning and overall health status are not yet affected by liver disease.

Status 2: Patient requires ongoing/frequent medical care, hospitalizations may be necessary.

Status 3: Patient is hospitalized and cannot be discharged.

Status 4: Patient is in the intensive care unit with liver failure and life expectancy is less than 7 days.

The entire system is continuously evaluated and improved by UNOS. Currently there is much debate as to whether major changes should be made in the allocation process. Some believe that giving priority to the sickest patients (Status 4) may not be practical because these patients already have many complications and are likely to have a higher mortality.

What is the hospital course of a liver transplant patient?

Performing the recipient operation of a liver transplant is probably the most complex and difficult of all abdominal surgical procedures. The procedure can take anywhere from 6 to 18 hours and requires meticulous technique and a tremendous amount of patience (Fig 2). Intraoperative problems can include hypothermia, coagulopathy, hypocalcemia due to multiple transfusions, and many hemodynamic changes caused by blood loss and reperfusion of the new liver.

Immunosuppression is started at the time of surgery and will continue throughout the patient's life. Each transplant center has

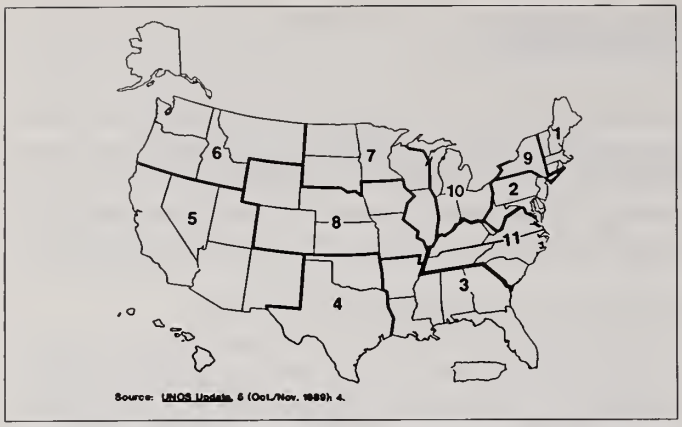


Figure 1.—Organs are distributed to local centers first, then within each of the 11 regions as determined by the UNOS map. (Courtesy of Thomas L. Fabry, MD and Franklin M. Klion, MD from the book *Guide to Liver Transplantation*, Ikagu-Shoin Medical Publishers, New York, New York; 1992)

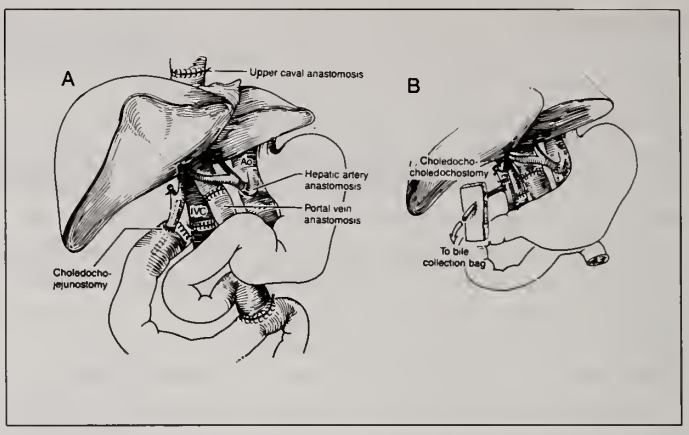


Figure 2.—The completed liver transplant. Two methods of connecting the bile duct are depicted. (Courtesy of Thomas L. Fabry, MD and Franklin M. Klion, MD from the book *Guide to Liver Transplantation*, Igaku-Shoin Medical Publishers, New York, New York; 1992)

its own protocol and new drugs are continually introduced and tested. In general, maintenance immunosuppression is with a combination of steroids, azathioprine, and cyclosporine. Drugs such as antilymphocyte globulin and OKT3 (monoclonal antibody directed against CD3 molecule on T-cells) are used as induction therapy and to treat severe rejection episodes. FK506 is a drug with properties similar to cyclosporine and can be used as maintenance therapy in place of cyclosporine for those patients with refractory rejection or intolerance to cyclosporine. FDA approval of this drug is expected in early 1994.

What are the complications?

Because liver transplants are such complex procedures and the patient is wrought with portal hypertension and coagulopathy, complications are common. About 20% to 40% of all patients will have a surgical complication requiring re-operation. Most common indications for operative intervention include bleeding, infection, and bile duct problems.[4,5]

Medical complications usually are related to immunologic problems, infections, or the side effects of medications. Rejection is common, and histologically proven rejection has been shown in one study to occur in 73% of patients.[6] Primary graft nonfunction or dysfunction may be due to immunologic problems or problems during the organ procurement. Early infectious complications usually are related to surgery. Later infectious complications include viruses (cytomegalovirus, Epstein-Barr virus) or opportunistic pathogens (pneumocystis, listeria). Finally patients may be at risk for lymphoproliferative disorders (due to immunosuppression) or recurrence of their original disease (especially hepatitis B and neoplasms).

What are the results of liver transplantation?

When patients are carefully selected and managed, the 1-year survival rate is 80% to 90% and the 5-year survival rate is 60% to 65%; however, these numbers will vary depending on the patient's original disease. The most favorable survival is obtained when patients are transplanted for primary biliary cirrhosis and sclerosing cholangitis. Results are less favorable for hepatic neoplasms and hepatitis B.

Should patients with alcoholic cirrhosis be transplanted?

Alcoholic liver disease is the single most-common cause for liver problems in the United States, but transplantation for this is somewhat controversial. The argument against transplantation is that these patients are "morally blameworthy", have associated medical problems, and are prone to recurrent disease. A number of studies have refuted this theory: The University of Pittsburgh demonstrated that 85.9% of the survivors remain abstinent post-transplant, and 74% return to some type of productive work. Factors that were predictive of abstinence include 1) support of a significant other, 2) acceptance of alcohol as the cause for liver disease, 3) active involvement in an alcohol treatment program, and 4) existing job or education allowing subsequent employment.[7] In general, patients with alcoholic liver disease can do well following liver transplant. Survival rates are comparable to patients with liver failure for nonalcoholic causes. Patient selection is absolutely essential, as only about 50% of all patients referred for transplant will be suitable candidates.[8]

Should patients with viral hepatitis B be transplanted?

An estimated 300,000 people will develop hepatitis B annually, with 15,000 having chronic hepatitis B and 300 progressing to fulminant liver failure.[7] Many of these patients will need liver transplants, however, there is concern over the significant rate of recurrence of hepatitis. We have learned a few things about the patterns of recurrent disease following transplant. It occurs more commonly in those with chronic Hepatitis B with cirrhosis, and less frequently in those with fulminant disease. High recurrence is thought to be due to extrahepatic replication of the viruses in such areas as bone marrow, spleen, and pancreas. Immunosuppression post-transplant also has been shown to enhance viral

replication; specifically steroids were found to increase hepatitis B surface antigen production. A number of centers are using hepatitis B immune globulin as prophylaxis with improved results. The 5-year survival is generally lower (60%) when compared to transplantation for other disease (80%).[9] Liver transplant for hepatitis B remains controversial; however, it is beneficial when performed in the proper setting. As we begin to understand immunoprophylaxis and develop new antiviral agents, perhaps we can learn to control recurrent disease.

What is TIPS?

The latest addition to the armamentarium of treatments for liver failure is the transjugular intrahepatic portosystemic shunt (TIPS). TIPS is a shunt that connects the portal venous system to the systemic circulation via the hepatic veins. It is essentially a portacaval shunt within the liver. These stents are placed by a skilled interventional radiologist with the assistance of high-resolution fluoroscopy, digital subtraction angiography, and ultrasound. Indications include portal hypertension with complications of bleeding varices, failed sclerotherapy, or ascites.[10] TIPS serves as a good bridge to liver transplant by decreasing the intraoperative and perioperative blood loss.[11]

Conclusions

The field of liver transplantation is exciting and dynamic. It is a well-accepted treatment for end-stage liver disease and when patients are carefully selected and managed, the 1-year survival rate is 80% to 90%. These are extraordinary results when it is considered this population of patients would not have survived their liver failure. With constant new developments in organ preservation, immunosuppression, immunoprophylaxis, and surgical techniques, results are likely only to improve.

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Pancreas Transplantation for Diabetic Patients in Hawaii

Alan H.S. Cheung MD, Whitney M.L. Limm MD, Linda L. Wong MD

Diabetes mellitus is a common disease affecting a large population in Hawaii. Over the past 20 years, pancreas transplantation has evolved into a viable therapeutic option for selected patients with diabetes mellitus. This report describes the first combined pancreas-kidney transplant performed in Hawaii on June 28, 1993 on a patient with juvenile-onset diabetes mellitus and diabetic nephropathy. The patient has remained off insulin and off dialysis since the transplant. The history, indications, techniques, and potential complications related to this procedure are discussed.

Case 1

The patient was a 38-year old woman from Maui who developed signs and symptoms of diabetes mellitus when she was 5 years old. Insulin was recommended at that time but her family refused. She was started on an oral agent, tolbutamide (Orinase®) in the 1980s. In 1986, she was started on insulin, and prior to surgery was administering 15 units of Humulin in morning and 5 units in the evening. On this schedule, her blood sugar ranged between 70 and 250 mg/dl on any given day. She had no history of seizures, coma or diabetic ketoacidosis, but developed progressive diabetic triopathy, including diabetic nephropathy, retinopathy, and neuropathy. She was started on hemodialysis on July 29, 1991. She had progressive retinopathy and has had bilateral laser photocoagulations as recently as March 1992. She had numbness and parasthesia of both lower extremities secondary to neuropathy; her other medical problems included a left heel ulcer, hypertension, and a history of asthma.

As part of her evaluation for a possible pancreas and kidney transplant, the patient underwent extensive ophthalmologic and cardiac evaluations, including a coronary angiogram; the results were normal. A duplex scan of the lower extremities revealed no evidence of significant atherosclerosis. Her creatinine level was 10.6 mg/dl and her hemoglobin A1C was 12% (normal range is 5.5% to 7.7%). She was deemed to be a good candidate, and was placed on the waiting list for a combined kidney/pancreas transplant on December 1992.

An 18-year old donor, who died of a severe intracerebral injury following a skateboard accident, was pronounced brain dead and consent was given for multiple organ procurement. The donor had a creatinine of 0.8 mg/dl, and normal glucose and amylase levels.

Our patient was hospitalized on the evening of June 27, 1993 and was found to have a serum glucose of 255 mg/dl. She was started on an intravenous insulin drip at 2 units an hour. Her BUN and creatinine levels on admission were 93 mg/dl and 10.6 mg/dl, respectively.

A combined cadaveric kidney and pancreas transplant was performed on June 28, 1993. The operation took approximately 7 hours: A midline incision was made and the kidney was placed intraperitoneally in the left iliac fossa, the renal artery and vein were anastomosed to the patient's left iliac artery and vein, respectively. The kidney graft functioned immediately, producing urine while the patient was still on the operating room table. The pancreas graft was reconstructed on the back table, since the liver was also procured. The donor splenic artery and superior mesenteric artery were reconstructed, using a Y-graft of donor iliac arteries. This Y-graft was then anastomosed to the patient's right common iliac artery; the donor portal vein was anastomosed to the patient's right external iliac vein; a segment of donor duodenum was left intact and was anastomosed to the urinary bladder (Fig 1). The ureter was then anastomosed using the posterior Leadbetter-Politano method.

Postoperatively, the patient was taken to the intensive care unit where she was continued on an insulin drip; her serum glucose had dropped immediately to 86 mg/dl. Intravenous insulin was continued for the first few days in order to maintain tight control of the serum glucose between 100 to 150 mg/dl. The insulin drip was stopped by post-operative day 5 and the patient's blood sugar remained stable while off insulin, ranging between 109 mg/dl to 150 mg/dl. (Fig 2). Immunosuppression was begun with ATGAM® for 10 days, followed prednisone, azathioprine, and cyclosporine A. Antibiotic prophylaxis was given with vancomycin and imipenem (Primaxin®) for 3 days. Fluconazole was given for 14 days, and CMV prophylaxis was instituted with ganciclovir for 10 days, followed by acyclovir for 3 months. The patient was discharged 17 days after the transplant, with a serum

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amylase of 94 IU/l, serum glucose of 110 mg/dl without insulin, and a creatinine of 0.9 mg/dl.

The 6-month follow-up indicates the patient remains off dialysis and insulin. Her most recent serum creatinine was 1.1 mg/dl, and her blood sugar was 96 mg/dl. Her hemoglobin A1C level at 3 months was down to 8.0% (normal 5.5% to 7.7%). The patient did have an episode of acute rejection of both the pancreas and the kidney which was successfully reversed with OKT3®. She had complications related to her steroid immunosuppression, including CMV infection, and a duodenal anastomotic leak, which was successfully repaired. The patient is now at home on Maui.

Discussion

According to the local American Diabetes Association, diabetes mellitus affects about 78,000 residents of Hawaii. Since the discovery of insulin, Type 1 diabetes mellitus has been transformed from a lethal disease to a chronic illness, with many patients going on to develop secondary systemic complications. Since constant euglycemia is unachievable for diabetic patients by any practical mode of exogenous insulin administration, and since hypoglycemia is intolerable, chronic hyperglycemia (as documented by measurements of glycosylated hemoglobin) is the usual state in these patients.[1] After years of debate, the Diabetic Control and Complications Trial (DCCT) has now unequivocally shown that the development of neuropathy and retinopathy is related to the degree to which hyperglycemia is controlled.[2] Complications affecting the eyes, nerves and kidneys are present in more than 50% of patients who survive more than 20 years with diabetes. Even today, the average life span of people with diabetes is significantly shorter than that of the general population.[1]

As the DCCT study indicates,[2] only perfect glucose control for diabetic patients can prevent diabetic complications, but a perfect insulin delivery system has not been developed. An alternative to insulin injection is pancreas transplantation. It was originally thought that since diabetes is caused by insufficient production of insulin by the beta cells in the islets of Langerhans, transplanting these insulin-producing cells would allow perfect control of blood glucose.

The modern history of clinical pancreas transplantation was started on December 16, 1966, when the first human pancreas transplant was performed by Drs Kelly, Lillehei and associates at the University of Minnesota.[1,3] This case involved a uremic diabetic recipient on dialysis who had a simultaneous pancreas-kidney transplant. Since the initial transplant 27 years ago, more than 1,500 pancreases have been transplanted worldwide. The technique has evolved such that the 1-year patient survival is in excess of 90%, and the 1-year pancreas graft survival is approximately 85%.[3] This is comparable to results attained in kidney and other solid organ transplants. Furthermore, successful pancreas transplants have been shown to stabilize or improve neuropathy and prevent recurrence of diabetic nephropathy in kidney grafts.

Diabetes mellitus

Diabetes mellitus (Type 1 and Type 2) affects approximately 5% of the U.S. population. It is the leading cause of blindness each year. Compared with the normal population, patients with diabetes have a 25-fold increase in blindness, a 17-fold increase in risks of renal disease, a 25-fold increase risk of peripheral gangrene and a 2-fold increase in risk of heart disease and strokes[3]. Furthermore, diabetes accounts for 80% of major non-traumatic amputations each year. The late complications of diabetes include macroangiopathy, microangiopathy, retinopathy, nephropathy, cardiomyopathy, and neuropathy. Since the life expectancy of most diabetic patients is shorter than that of the normal population, the goals of the pancreas transplant are: 1) To maintain near normal glucose metabolism; 2) to improve the quality of life for these patients; and 3) to avoid the late complications and higher mortality. In 1990, more than 600 pancreas transplants had been performed worldwide.

Recipient selection

Unlike the heart or liver transplant, which are life-sustaining organs, the pancreas is non-vital in that exocrine and endocrine replacements currently are available. Therefore, the justification of the risk of surgery and life-long immunosuppression cannot be taken lightly. There are 3 categories of patients who could benefit from the pancreas transplant (Table 1).

The first are patients with end-stage diabetic nephropathy who are on dialysis. Many of these patients want to have a kidney transplant for an improved quality of life by being off dialysis. Since they will undergo surgery for the kidney transplant and will require life-long immunosuppression, performing a combined kidney and pancreas transplant in this group would not increase the surgical or immunosuppressive risks significantly. Our patient was in this category. Patients who have had a successful kidney transplant could ask to be candidates for a pancreas transplant, since they are already on life-long immunosuppression. The only disadvantage is that they will have to undergo a second operation for the pancreas transplant.[4,5]

The second category is patients with pre-uremic diabetic nephropathy who have documented macro-albuminuria. The natural history in this group of patients is that they will ultimately require dialysis. Performing the pancreas transplant alone may prevent the diabetic damages to the kidney and ultimately avoid dialysis in these patients.

The final category is patients with severe diabetic management problems. These patients have hyperlabile diabetes or special problems associated with unawareness of hypoglycemia. Some of these patients have a profoundly poor quality of life with seizures and comas, and many of them are afraid to leave their homes. For these patients, a pancreas transplant alone could cure their diabetes and improve their quality of life.[6]

The detailed clinical criteria for candidates for pancreas transplantation or combined kidney/pancreas transplantation are listed in Table 2. Besides active infections or malignancies, other contraindications for pancreas transplantation are listed in Table 3.

Donor selection

Almost all transplant centers now rely exclusively on cadaver donors for their pancreas organs. The cadaveric donor should

Table 1 Possible indications for pancreas transplantation in diabetic patients

Patient's condition	Type of transplantation
End-stage diabetic nephropathy	Combined kidney and pancreas transplant, or pancreas after kidney transplant
Pre-uremic diabetic nephropathy	Pancreas transplant alone
Severe management problems: • Hyperlabile diabetes • Unawareness of hypoglycemia • Severe neuropathic pain	Pancreas transplant alone

Table 2 Clinical criteria for candidates for pancreas transplantation or combined kidney/pancreas transplantation

1. Adults, ages 18 to 50 years
2. Presence of insulin-dependent diabetes
3. Well-controlled blood pressure, with or without medication
4. No evidence of inoperable peripheral vascular disease—specifically, cerebrovascular disease or ischemic ulcers—or previous amputation necessitated by vascular disease
5. Not requiring narcotics or large amounts of analgesics
6. No recent retinal hemorrhage
7. No history of major or significant myocardial infarction
8. No insulin resistance—that is, insulin requirement of no more than 2u/kg.
9. No other contraindications to transplantation, including previous multiple operations, active infections, or malignant lesions
10. Ability to understand risks and benefits of the procedure and to cooperate and comply with the medical program

Table 3 Contraindications for pancreas transplant

- Ongoing peripheral gangrene
- Severe coronary insufficiency with angina or intractable cardiac decompensation
- Severely incapacitating peripheral neuropathy, ie, bedridden patients
- Severely incapacitating autonomic neuropathy, ie, gastroparesis

have no history of diabetes mellitus. Other absolute contraindications include severe chronic pancreatitis and a history of pancreatic damage by trauma. Relative contraindications include alcoholism, recurring acute pancreatitis, and elevated levels of blood glucose or serum amylase levels. The usual criteria for organ donation are noted in this issue in Dr Whitney Limm's article, "The Need for Organ Donation in Hawaii".

Operative technique

The procedure of pancreas transplantation has evolved to the current technique of transplanting the whole pancreas organ with a segment of duodenum for exocrine drainage into the urinary bladder (Fig 1). This approach allows external drainage of the pancreatic duct without the contamination involved with an enteric anastomosis. This also provides the opportunity to monitor urine pH and amylase as a measure of pancreas allograft function and to biopsy the pancreas if necessary via cystoscopy.[7,8]

Immunosuppression, rejection, and complications

The extensive experience at the University of Minnesota has suggested that a triple therapy of maintenance immunosuppression using cyclosporine, azathioprine, and prednisone in combination has the highest success rate. Antilymphocyte globulin, such as ATGAM®, usually is given in the immediate postoperative period.

Rejection of the pancreas allograft is mainly manifested in the deterioration of graft function; inflammatory signs may occur, although inconsistently. A gradual, progressive hyperglycemia with presumed etiology secondary to rejection may be noted. A decrease in urinary amylase output during rejection episodes may occur up to 4 days prior to clinical hyperglycemia. Urinary amylase has proven to be a sensitive indicator of early rejection; early treatment of rejection decreases graft loss. Furthermore, cystoscopically directed biopsy of the pancreas can confirm early rejection. Serum anodol trypsinogen also has been shown to be a marker for early acute rejection. Even with the triple therapy, rejection can occur in 50% to 70% of the cases,[1] as occurred in our patient. Fortunately, rejection can be reversed in over 95% of the cases by using OKT3® a monoclonal antibody directed against T-lymphocytes.

Surgical complications occur in 30% to 40% of cases: hyperamylacemia, graft pancreatitis, pancreatic pseudocysts and ascites, pancreatic fistula, anastomotic leaks with fistula, intra-abdominal abscess, graft thrombosis, bleeding, intestinal obstruction or perforation. Opportunistic infections and potential malignancies also can occur, as in any immunosuppressed patient.

Results

After a successful pancreas transplant, blood glucose normalizes within hours or days. Patients can maintain a normal or near normal fasting blood glucose and half develop normal glycosylated hemoglobin levels. Both were shown in our patient. Most individuals have a normal oral and intravenous glucose tolerance test. A successful pancreas transplant can prevent the occurrence of diabetic nephropathy or the progression of early diabetic lesions in grafts exposed to the diabetic milieu. Depending on the stage of the ophthalmic lesions, the probability of advanced retinopathy progression is not altered in the first few years after a pancreas transplant. However, the



Fig 1.—Technique of combined pancreas-kidney transplantation with the duodenal segment technique. The kidney is placed in the left iliac fossa, and the pancreas in the right. The duodenum is drained into the bladder (Courtesy of WB Saunders Company.)[11]

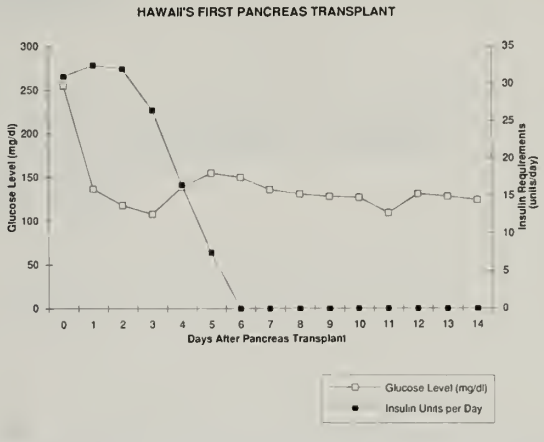


Fig 2.—The glucose level after our patient's successful pancreas transplant. Insulin was stopped after the 5th post-operative day.

retinopathy stabilizes after 3 years with a successful pancreas transplant. Neuropathy improves or stabilizes for most recipients. The nerve conduction velocity and evoked muscle action potentials increase. Patients with severe autonomic neuropathy have a significantly higher probability of survival than patients who did not undergo transplant.

Many studies have looked at the influence of a successful pancreas transplant on the quality of life and the effects of day-to-day living in these patients. The quality of life for many individuals improves simply with insulin independence. Ninety-two percent of patients thought that managing immunosuppression was easier than managing diabetes and insulin.[9] About two-thirds thought that diabetes was more demanding on their families' time and energy than the transplant.[9] All of the patients with successful graft function said they would encourage others with similar diabetic problems to consider a pancreas transplant.[10] Interestingly, even most of the patients with a failed pancreas graft opted for re-transplantation, and most with functioning grafts said that they would undergo a re-transplant if their current graft failed.[10] Since pancreas transplantation is a complicated procedure, it is natural to question whether the benefit is worth the price, and many pancreas transplant recipients have emphatically stated that it is.

The one year pancreas allograft survival rate is over 70% to 85% in diabetic recipients of a simultaneous kidney and pancreas transplant.[3,8] The one-year patient-survival rate is over 90%. This is similar to those achieved with other solid organ transplants.

Summary

Pancreas transplantation as a treatment for diabetes mellitus is the youngest area in the growing field of organ transplantation. Over the past 26 years, it has evolved into a viable therapeutic option for selected patients with diabetes mellitus. Until islet transplant or gene therapy for treatment of diabetes becomes a reality, pancreas transplant remains the only proven cure for selected patients with diabetes mellitus in 1994.

Acknowledgement

Many individuals have contributed to the care of our first pancreas/kidney transplant patient. Special thanks go to Drs Steve Moser and Gregory Park for the referral of this patient, and Dr Jared Sugihara for his excellent care and assistance.

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The Need for Organ Donation in Hawaii

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Donor organ availability is the primary limiting factor in organ transplantation. The number of patients on the national organ waitlist has increased to more than 32,000, while the number of donors has remained fairly constant at approximately 4,500 per year. In Hawaii, there are 98 patients awaiting organ transplants, and for the past 5 years, the average number of donors per year was 15. The criteria for organ donation, brain death, approaches to donation request, and the management of the multiple organ donor are discussed.

Introduction

The field of organ transplantation has made remarkable progress in recent years. Advancements in tissue typing, surgical techniques and immunosuppression have resulted in enhanced 1-year patient survival rates for kidney, heart, pancreas, and liver transplants. The advances in the field and resultant successes have led to a steady increase in the number of patients seeking transplants. The number of year-end registrations has been increasing since 1988, with annual increases ranging from 12% to 19%.[1] Overall registration on the United Organ Sharing Network (UNOS) waitlist has increased by 81% between 1988 and 1991.[1]

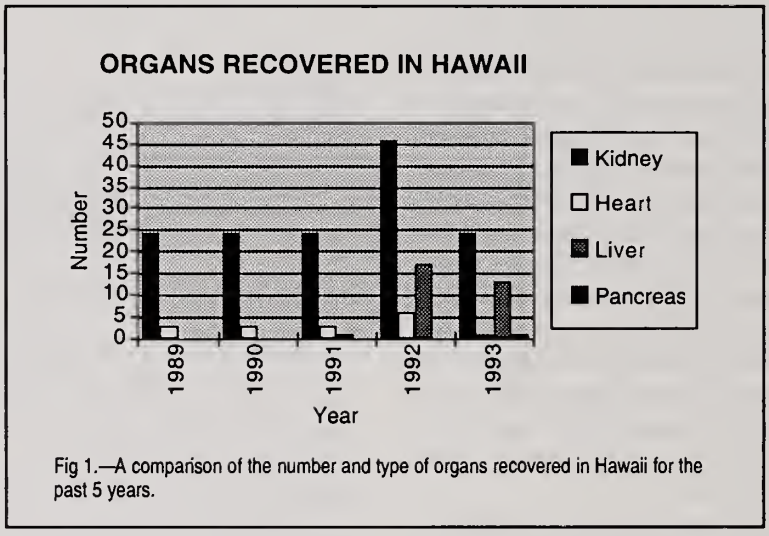


Fig 1.—A comparison of the number and type of organs recovered in Hawaii for the past 5 years.

This increase in the number of patients on the waitlist has not been matched by an increase in the number of organ donors. From 1988 to 1991, the total number of cadaveric donors increased by only 11%.[2] Because the number of organ donors has not increased in proportion to the waitlist, waitlist mortality is increasing. One estimate is that 38% of patients awaiting heart, lung, or liver transplantation die before an organ becomes available.[3]

In Hawaii there are 98 patients on the transplant waitlist (Table 1). Many patients have been on the list for several years as the state averages less than 20 donors a year.

Nationally, the reasons for the shortage of organ donors include: 1) The family is approached and declines permission, 2) organ donation is not considered after the diagnosis of brain death has been made, 3) a failure to identify brain death, and 4) poor organ perfusion through donor instability. When the family is approached and consent is declined, the following reasons have been given: Emotional, racial/ethnic and religious .[2]

The aim of this study was to examine the characteristics of the actual donors in Hawaii and compare them to national statistics. Discussion will be focused on the need to increase both the local and national donor pools, an explanation of brain death, approaches to donation request, and management of donors prior to organ procurement.

Methods

The Organ Donor Center of Hawaii is a non-profit organization devoted to coordination of organ donation in Hawaii. It also educates the medical community and the general public about the importance of organ donation. This organization, like the 65 other organ procurement organizations in the United States, is funded by Medicare and private insurance.

A retrospective analysis was performed on all organ donors in Hawaii using records from the Organ Donor Center of Hawaii.

Department of Surgery, John A. Burns School of Medicine University of Hawaii and St. Francis Medical Center, and the *Organ Donor Center of Hawaii

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Honolulu, HI 96813

To develop a profile of the donors in Hawaii, the following information was obtained for each patient: Age, sex, cause of death, ethnicity, hospital where donation originated, and organs donated.

Results

Over a 5-year period from January 1, 1989 to December 31, 1993, 75 organ donors were recorded in Hawaii. Table 2 indicates the number and age distribution of donors per year. The average age was 31; local donors reflected the national statistics in that a majority were from the 19 to 35 age group. Seventy-five percent of local donors were male; this majority was consistent with the national data (61.5%).[2] Over 50% of the local donors were Caucasian, with Japanese, Chinese and Filipino minorities represented (Table 3).

For organ donors in Hawaii, motor vehicle accidents were the most common cause of death. Nationally, this cause is ranked behind cerebrovascular accidents, which is thought to be due to improvements in the care of trauma patients and passage of safety laws governing the use of seatbelts and motorcycle helmets;[2] perhaps the higher ranking locally reflected the absence of mandatory helmet laws for motorcycle riders. Locally, other causes of death included cerebrovascular accidents, gunshot wounds, asphyxiation and drowning (Table 4).

Thirty of the donors were hospitalized at The Queen's Medical Center, where a large number of trauma patients are treated. As a result of advances in organ procurement and storage, hospitals on Neighbor Islands contributed to the donor pool (Table 5).

In the early stages of this review, only kidneys and hearts were recovered for transplantation. In 1991 the first liver was recovered; the first liver recovered and transplanted in Hawaii occurred in 1993. Another landmark in local medical history also occurred 1993 when the first pancreas was recovered and successfully transplanted (Fig 1).

Discussion

The biggest obstacle facing organ transplantation is the limited number of organ donors. It is estimated there are between 4,992 and 28,954 potential cadaveric organ donors nationally each year.[4] The actual number of donors, however, has been fairly constant, with 4,516 donors in 1991.[2] Over the past 5 years, the state of Hawaii has averaged 15 donors per million of population a year. This is below the national average of 18 donors per million of population a year.

Criteria for organ donation

Organ donation should be considered when a patient is admitted with a life threatening or irreversible brain injury. The Organ Donor Center of Hawaii should be notified when a diagnosis of brain death is anticipated or has been made. Following declaration of brain death, consent for organ donation is obtained from the next of kin. Regardless of the patient's signature on a donor card or driver's license, no organs are removed without this consent. The involvement of the donation coordinator at this stage is crucial; these highly trained individuals can give families a clear and objective understanding of organ donation. Concerns regarding respect for the body and preservation of dignity, along with questions regarding funeral arrangements and viewing are of utmost importance to the grieving family. Donation coordinators are available 24-hours a day to assist the families, physicians and hospital staff throughout the donation process.

The ideal cadaveric donor is a previously healthy individual whose death is caused by an isolated, irreversible brain injury.[5] To be considered, adequate circulation and oxygenation to the organs must be maintained. Absolute contraindications to organ donation are: Non-CNS malignancy, active infection (bacterial, fungal, viral, parasitic), or seropositivity for hepatitis, HIV, and HTLV-1. The upper age limit for organ donation is increasing; in Hawaii, liver and kidneys from donors as old as 66 years of age with adequate physiologic function have been removed for transplantation. The generally accepted upper age limit for heart donation in Hawaii is 45 years of age.

Brain death

Brain death is required prior to cadaveric organ donation. The specific criteria for brain death was initially addressed by the Harvard Commission in 1968, with other studies following.[6] Currently, all 50 states have laws recognizing brain death.[5] The current guidelines for determination of brain death are summarized in Table 6. In Hawaii, declaration of brain death by 2 physicians is required; one of the physicians usually is a neurologist or a neurosurgeon and neither physician may be a member of the transplant team.

After metabolic factors have been corrected, tests are administered to determine cessation of cerebral and brain stem activity. While the law permits declaration of brain death by clinical examination alone, confirmatory tests such as an EEG or a nuclear medicine brain flow study may be performed.

A brain dead patient is legally dead. This concept may be difficult for the public to grasp and is important to consider when discussing the timing of the request for organ donation. Families should not be approached about organ donation until after they have been told their loved one is brain dead and all questions are answered about this diagnosis. This concept is known as *decoupling*. After the families have had the chance to accept brain death as final and to grieve over the loss of their loved one, then the option of organ donation can be presented. Research has shown that by using the decoupling process, the consent rate from families nearly doubled.[7]

Donor management

If there are no contraindications to organ donation after the medical history is reviewed, the functional status of the various organs is evaluated with blood tests and hemodynamic monitoring. The brain dead patient is often hemodynamically unstable during the evaluation process. To ensure adequate perfusion of the organs, a central venous catheter or Swan Ganz catheter and a Foley catheter often are necessary to guide fluid management. The goal is to maintain normal or near normal oxygenation and perfusion of the organs being considered for transplantation.

Table 1 Patients on Transplant Waitlist in Hawaii

As of November 24, 1993

Kidney	90	Heart	4	Liver	3	Pancreas	1
Total	98						

Table 2 Donors by Age And Year in Hawaii

(1989 to 1993)

Age Bracket	1989	1990	1991	1992	1993
0 to 5				2	1
6 to 18	4	2	1	5	3
19 to 35	5	6	8	10	5
36 to 49	3	4	4	3	2
50 to 64				5	1
>65					1
Total Donors a year	12	12	13	25	13

Table 3 Donors by Ethnicity in Hawaii

(1989 to 1993)

Caucasian	44	(58%)
Japanese	8	(11%)
Chinese	4	(5%)
Filipino	3	(4%)
Local mix	5	(7%)
Other	11	(15%)
Total	75	(100%)

Table 4 Donors by Cause of Death in Hawaii

(1989 to 1993)

Motorcycle/Car	23	(31%)
Cerebrovascular	19	(25%)
Gunshot	9	(12%)
Other head trauma	11	(14%)
Asphyxiation	2	(3%)
Drowning	3	(4%)
Other	8	(11%)

Table 5 Donors by Hospital in Hawaii

(1989 to 1993)

Hospital	Number of Donors
The Queen's Medical Center	30
Kapiolani Medical Center	7
Straub Clinic and Hospital	7
Kaiser Permanente Medical Care Program	6
Tripler Army Medical Center	6
Maui Memorial Hospital	5
Castle Medical Center	4
Hilo Hospital	3
Kapiolani Medical Center at Pali Momi	3
St. Francis Medical Center	2
Kuakini Medical Center	1
Wilcox Memorial Hospital	1
Total	75

Table 6 Guidelines for Determination of Death

- Established in the absence of complicating metabolic factors, drug overdose, altered electrolyte, acid-base or glucose homeostasis, hypothermia (<32.2° C), or shock
- Etiology established, recovery excluded, persists on repeated examination

Neurologic Death

- Deep coma, cerebral unresponsiveness and unreceptivity
- Absence of brain stem functions
- No spontaneous respirations (apnea in the setting of hypercarbia)
- Reflexes are all absent: Pupillary light, oculocephalic (doll's eyes), oculovestibular (cold water calorics), oropharyngeal (gag), respiratory, and corneal

Cardiopulmonary Death

- Irreversible cessation of circulatory and respiratory functions

Over 70% of organ donors require treatment for diabetes insipidus and Pitressin is the most commonly used agent for this condition. Electrolytes are monitored frequently and corrected as needed.[7,8]

When the blood test results are deemed acceptable, the patient is then taken to the operating room. The organs are perfused with cold preservation solutions prior to surgical removal; this is referred to as core-cooling. This is done by placing catheters in the infrarenal aorta and vena cava.[5] Surgical removal of multiple organs follows this sequence: Heart, liver, pancreas, and kidneys.[5]

Once removed, the preservation of the organ can be prolonged using hypothermia either by means of simple cold storage or with a hypothermic pulsatile perfusion machine.[5] With the use of preservation solutions and either hypothermic technique, a heart can be preserved for 5 hours, liver and pancreas up to 24 hours, and a kidney up to 48 hours after removal.

Summary

Organ transplantation, both locally and nationally, is limited by the lack of organ donors. This review of the profile of local organ donors revealed similar demographic information when compared to national statistics. In an effort to alleviate the organ shortage in Hawaii, the past 5 years showed an increase in the types of organs obtained for transplantation. In addition, organs from older donors are being transplanted. Further study is needed to determine the barriers to organ donation. Once identified, and appropriate action initiated, it is hoped that the number of transplants will increase and the waitlist mortality can be minimized through maximizing organ recovery.

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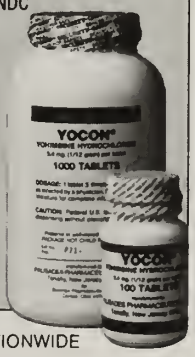
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The Weathervane

Russell T. Stodd, MD

For every action, there is an equal and opposite criticism.

At the December 1993 meeting of the AMA House of Delegates, the House wisely backed away from its previous policy of aggressive support of employer-mandated health insurance. Struggling for sugarcoating, Lonnie Bristow MD, Chair of the Board of Trustees, denied that the House was changing its policy, but rather was expanding it to allow for additional mechanisms, eg individual mandates, health IRAs. The president allowed as how he was "real disappointed" with the AMA. So to offset the AMA policy, the White House will seek the endorsement of the *cognitive* ACP and the AAFP. Clearly, the strategy is to divide the physician community and, foolishly, some segments of organized medicine seem bent on subscribing to federal control.

If an experiment works, something has gone wrong.

The health IRA is really a superb plan that would allow cost control, individual management, and a minimum of government intervention. The last point is the likely reason why the health IRA plan will lack administration support. And of course, our Hawaii Congressional delegation would not consider a plan that would escape from their constant socialistic agenda, irrespective of the benefits and freedom to both patients and providers.

Indolence is no way to practice medicine.

The defendant doctors, both eye surgeons, each accused the other of failing to provide care for a patient with acute glaucoma. The first physician was notified by the hospital ER physician by telephone at 10 pm that the patient was present with a working diagnosis of glaucoma or iritis. Without seeing the patient, the on-call ophthalmologist doubted the diagnosis and recommended sinus x-rays, and was off call at midnight. He directed that no further calls be made to him after that hour, and that any additional care should be provided by the ophthalmologist for the following day. That doctor was unavailable and the ER desperately called several eye surgeons before finally getting one to see the patient at 2:30 am, and he verified the diagnosis of angle closure glaucoma. The patient had numerous procedures on the eye, never regained vision, and ultimately the eye was removed. The jury returned a verdict in favor of the plaintiff amounting to $660,000—and assigned 75% fault to the first physician, 25% to the unavailable physician on call, and no judgment against the hospital. And the moral of the story is—some doctors immature with age.

The only imperfect thing in nature is the human race.

Surprise, surprise—a 4-year study of HMOs funded by HCFA, revealed that Medicare paid 5.7% more to HMOs than it would have expended if the care were provided under fee for service. "Our system for HMOs is just wildly inadequate," according to Bruce Vladeck PhD, head of the Health Care Financing Administration. The outcome of this enlightenment is that Medicare will not promote HMOs for its patients until HCFA finds a better way of paying for services, or at least that is what Vladeck is saying today. And, in addition, a nationwide study (published in *JAMA*) of 17,000 patients found widespread dissatisfaction with HMOs. Independent doctors were easier to reach, more apt to schedule appointments on short notice, and showed more interest in the patient's well-being.

Gatekeepers, HMOs, closed panels, please take note.

Another HMO item relates to rationing. Health Net, the second-largest health maintenance organization in California, denied a bone marrow transplant for a patient with breast cancer, claiming that the process was experimental. The patient's doctors said the procedure was her only hope, and an internal Health Net panel approved. However, the transplant was denied by an employee who was paid according to how much money he saved! The patient died, and the family's attorney sued claiming breach of contract. The jury ordered Health Net to pay $89 million total, $12 million in compensation, $77 million in punitive damages. To describe the hypocrisy in our system of justice, take note that a judge in Wisconsin denied a couple's similar suit to force the Blues (United of Wisconsin) to pay $120,000 for a bone marrow transplant for a 28 year-old woman with breast cancer. Go figure.

He's a fine friend. He stabs you in the front.

Doctors never sue doctors for malpractice, right? No, quite wrong. In fact physicians are just as likely, or perhaps more so than the general population, to seek damages for perceived injury. In New York state, a physician underwent blepharoplasty to remove excess skin from her eyelids, and subsequently had lagophthalmos with inadequate lid closure, burning, irritation and excessive dryness and infection. It was necessary to use lubricants and ointments to control symptoms, a not uncommon event in the plastic surgery world. A trial court directed a verdict for the patient,—but awarded no damage—but the court overruled the jury and said monetary damages should be awarded.

For every "10" there are ten "1s".

The frequently stuffy and tedious *New England Journal of Medicine* decided to inject some *Playboy*-type material by publishing a study of the sexual harassment of women doctors. Apparently it is a common occurrence when some men patients find themselves unable to accept a woman in a position of power, and express themselves by making sexual advances. While the aggressive behavior left the doctors angry or fearful, most of them did not find it a serious problem. Rather, the lady docs were considerably more intimidated by harassment from medical colleagues or supervisors.

Addenda

▲ 70% of the world's 15-million AIDS sufferers are in Africa.

▲ According to the National Institute on Alcohol Abuse and Alcoholism, per capita liquor consumption in Washington, DC is twice the national average.

▲ To paraphrase David Letterman, "Managed care sucks."

▲ "Merry Christmas from our family to yours." s/s The Clintons—but—but—but only Bill and Hillary were pictured!?!

Aloha and keep the faith

rts

■

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Birth of Maui

The goddess Hina gave birth to Maui the demigod. She mysteriously conceived the child after wearing a red *malo* or loincloth which she had found on the beach.

Soon after Maui was born, Hina cut a lock of her hair, wrapped the boy in it and took him to the sea where she made a bed of *limu kala* and set the child on it. A great jellyfish supported the boy from beneath and Maui moved slowly out to sea accompanied by vast schools of fishes and great flocks of seabirds. This was the beginning of his journey to *Kuaihelani*, the land of the ancestral gods *Kane* and *Kanaloa.*

At *Kuaihelani* Maui acquired his many skills and powers; he returned to our world and performed many incredible and beneficial feats for his people. For his mother, Hina, Maui performed his greatest feat of all—he slowed the sun to make the days longer.

Editorial Norman Goldstein MD

A Letter to Our Legislators

When your editor was asked to testify before Senate and House committees this legislative session, it was a very interesting and educational experience—to say the very least!

Testifying at legislative meetings takes time—a lot of time. It takes time to prepare and submit testimony, it takes waiting time and presentation time—but quite frankly, I found it very rewarding.

It also takes a lot of time for our legislators and their staffs to prepare the mass of documentation required to run our state. I now really appreciate the efforts of so many of the representatives and senators.

Physicians, when called to offer testimony, give up the time—office hours or time with your family—to help inform our legislators about the pressing medical issues.

There are so many sides to every resolution or bill presented to our legislators. Physicians must work together in the legislative ring and even *before* changes get into the legislative circuits.

Good medical care available to all in Hawaii and the rest of the country is the primary aim of most physicians. As medical reforms change, and they are changing rapidly, physicians must play a more active role—no, a *proactive* role.

There will be compromises to be made by everyone. Physicians must learn to live in our new world of health care. We must continue to provide the best medical care, medical research and education.

Legislators: Mahalo for all of your efforts to make Hawaii "the Health State."

We welcome letters from legislators for possible publication in the *Hawaii Medical Journal.*

Helicobacter pylori infection—gastritis, ulcers and gastric cancer

The paper by Min Sang Ro MD and associates at St Francis Medical Center was submitted for publication two years ago. Because of a backlog of papers submitted, this manuscript was placed on the back burner.

(Continued on Page 123)



"I'm practicing medicine the way I think it should be practiced, sans the paperwork and administrative overload."

Owen Brodie, MD, joined CompHealth's locum tenens medical staff in 1989, after 21 years in private practice. Since then he's worked in temporary assignments in state facilities, filled in for attending physicians, covered for private practitioners across the country.

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Medical School Hotline

Learning Medical Microbiology in the New Problem-based Learning Curriculum

At the University of Hawaii John A. Burns School of Medicine, a problem-based learning (PBL) curriculum has been in place since 1989. How do students learn about infectious diseases in this new curriculum?

The tutor handed out page one of the health care problem (HCP) and Dale (BA Asian Studies) began reading, "Bob Kim is a 57–year–old onion grower in Kula, Maui. He presented himself to the emergency room complaining of persistent cough with green sputum, pain in the front on the left side of the chest, worse on deep inspiration. He has lost 6 kg recently. About 3 weeks earlier, Bob chilled himself after working up a 'heavy sweat' harvesting onions. Since that time, he has not felt well, continued to have a bad cough and has been tired and feverish. Three days later, he coughed up yellowish-green sputum. Bob lives alone and has not seen a physician for 25 years."

The tutor then asked the five students in his tutorial to identify the patient's problems. Kevin (BA Biology) volunteered to be the blackboard person and wrote, "Bad cough with yellowish-green sputum, chest pain and fever," as students called out the problems. Michelle (BA in History) added "weight loss" and felt that "not seeing a physician for 25 years" might be a problem. Dale wondered why the patient had come to the emergency room and had not gone to a family physician.

The next step was hypothesis generation. Lucy (BS/MA Biology) suggested "pulmonary infection of some kind—might be TB, but I don't know anything about it." Robb (BA Animal Physiology/BS Bioengineering) suggested that "chronic emphysema" might be involved if the patient were a smoker. Kevin added that the "weight loss, tiredness and chills" sounded like some kind of cancer was involved.

Page two revealed that the patient had smoked two packs of cigarettes a day since the age of 15 and enjoyed drinking "15 oz of vodka each weekend." He also noticed a morning cough with occasional production of a small amount of mucoid sputum and some mild shortness of breath and wheezing on exertion. Students added the hypotheses of "intrinsic asthma" and "chronic bronchitis" to the list.

The tutor asked the students to prioritize the hypotheses. The group agreed that pulmonary infection was most likely, but that TB, chronic bronchitis, emphysema and lung cancer also were possibilities. The tutor then asked, "What do you need to know to rule in or rule out each of the hypotheses?" Students proceeded to prepare a list of physical and laboratory findings expected for each of the hypotheses.

"What about lab tests?" the tutor asked. Robb asked for a CBC and data on left-shift. Page four revealed a WBC level of 15,600 with 7% bands. Sputum stain: >25 PMNs and <10 epithelial cells with mixed gram-positive cocci in pairs, clusters and chains and occasional pleomorphic gram-negative coccobacilli. The students were puzzled with so many organisms. A quick check of a microbiology resource text indicated that the gram-positive cocci in pairs might be *Streptococcus pneumoniae*, but they didn't know anything about this organism. Kevin quickly wrote a learning issue on the blackboard, "*Streptococcus pneumoniae*: What is the microbiology of this bacterium and what kinds of pneumonia does it cause?" The resource text indicated that the gram-positive cocci could be staphlococci or streptococci, but which organism? The pleomorphic gram-negative coccobacillus was probably *Hemophilus influenzae*. Other learning issues went up on the board. What are the different types of streptococci and what kinds of infections result? What is the microbiology of *H. influenzae*?

The tutor asked for an interim problem formulation. The students summarized: "At this time, we think that this is a 57–year–old farmer who suffers from an acute bacterial infection, the specific etiology of which is unknown. He also has a problem of access to the health care system." The students eagerly divided up the learning issues and went off to do research.

Three days later, they came back with two to three–page handouts of what they had researched. Now began the process of integration and peer-teaching. The group returned to page one of the HCP and began the investigation anew. This time, students had new information and each chimed in when he or she had learned something relevant to the problem. Students enjoyed learning and sharing information with each other.

In the new PBL curriculum, faculty in the Department of Tropical Medicine serve as tutors and faculty resources. They also write and edit HCPs to cover important concepts and principles in infectious disease and immunology. They have given conferences and colloquia on topics such as giardiasis, cryptosporidiosis, tuberculosis, HIV, viral hepatitis and immune mechanisms in rheumatoid arthritis.

Faculty also offer infectious disease elective courses. These are team-taught with other faculty in the Departments of Pediatrics, Medicine, and Family Practice. Students have investigated problems ranging from viral influenza to histoplasmosis to eosinophilic pneumonitis. Each problem has been investigated using the problem-based learning format.

Active problem-solving seems to be more challenging and exciting to students, and they don't seem to nod off in the lecture classes anymore.


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HMA President's Message

Andrew Don MD

Last year about this time AMA had it's first "Partnership in Action" meeting in Washington DC. The atmosphere was tense and filled with anxiety and frustration in anticipation of the President's health system reforms.

Again physicians from across America gathered on March 8 in Washington DC on this vital issue. Representatives from all state societies and many speciality societies stood strong on "Voice + Choice + Coverage = AMA Support."

Speaker after speaker from Congress members Gingrich, McDermott, Dingell, and Rowland to Senators Gramm, Dole, Hatch, and Kennedy elicited AMA support as well as voiced their stand on health system reform. Though there are many differences, they appeared to be listening to physicians. President Clinton's health reform package most likely will not survive, but a sense prevailed that some form of a health care package will come out of Washington. Representing all physicians, the AMA is strongly making its voice heard.

The following letter was sent to all members of Congress expressing physician involvement and what should be included in health system reform:

Dear :

As physician organizations, we agree on the need for health system reform legislation that gives every American universal coverage for health care and effectively controls rising health costs, while ensuring quality patient care. These principles have been articulated by numerous medical organizations in their various health system reform policies and proposals. They remain the foundation of our legislative agenda, which is to enact laws that assure universal coverage for a standard set of health benefits, regardless of employment or economic status.

We believe that any measure adopted by the Congress should:

- Achieve universal coverage through a program where resonsibility is shared by employers, individuals, and government in paying for health care coverage.
- Assure that every American has his or her choice of health plans, physicians, and other providers.
- Establish competition in the marketplace as a method of slowing the rate of growth in health spending.
- Give patients price and quality information to permit them to make informed decisions.
- Eliminate needless bureaucracy to create an efficient, streamlined and coordinated system that minimizes red tape for patients, physicians, and other providers. Furthermore, health system reform must leave medical decision-making in the hands of physicians and their patients.

We believe that to enable physicians to best serve the interests of their patients, meaningful health system reform also must contain these elements:

- Significant antitrust relief that enables physicians to have a strong unified voice to balance the growing corporate and government domination of health care.
- Allow for physician–directed health care networks.
- Enhanced self-regulatory powers that would enable the profession to effectively police itself and its members without the threat of unwarranted litigation.

We also believe that major reforms in the professional liability system must be enacted, including a $250,000 cap on noneconomic damages, limits on plaintiff attorney fees, and other measures that would minimize defensive medicine.

Every American will be affected by health system reform legislation. The focus of policy-makers should be on how their decisions will affect patient care. Any system that raises significant barriers between patients and physicians will not provide the quality care our nation expects and deserves. We believe the above principles outline a framework for establishing constructive, effective and needed health system reform.



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HMA Council Highlights

The HMA Council met on February 4, 1994. Members present were: Drs A. Don, F. Holschuh, J. Chang, R. Stodd, B. Shitamoto, R. Goodale, T. Smith, R. Lee–Ching, D. Canete, H.Y.H. Chinn, H. K.W. Chinn, P. Chinn, P. Hellreich, S. Hundahl, M. Shirasu, J. Betwee, H. Percy, P. Kim, C. Kadooka, T. Smith, W. Chang, W. Dang, G. Goto, J. Lumeng, J. McDonnell, S. Wallach. HMA Alliance president S. Foo, Alliance members L. Nishi, A. Nip. Guests: Drs W. Foo, L. Jacobs, S.L. Schlesinger. Staff: J. Won, B. Kendro, N. Jones, L. Tong, J. Asato, J. Estioko, A. Rogness–recording secretary.

The HMA treasurer reported that the December 31 figures on HMA's financial statements show a deficit of around $63,000. The Finance Committee is meeting quarterly to review the financial picture.

Dr Stephen Wallach was selected by ballot at Council to be HMA's nominee for appointment to the AMA Council on Legislation.

Dr Jacobs, chair of the Committee on Physicians' Health met with Council to see if the Committee can continue to provide its services to members and nonmembers. The HMA Bylaws state that HMA can peer review only its members. A vote was taken and the Committee will continue to provide its services, encouraging nonmembers to become members of the HMA. Dr Jacobs also requested financial assistance to hire a professional staff person experienced in addiction medicine to intervene, monitor and followup on physicians in need. Ms S. Foo, President of the HMA Alliance, stated that the Alliance would be interested in helping the Committee raise funds for its needs. Mr Won is also working with MIEC to obtain funds for the project.

The *Hawaii Medical Journal* covers for 1994 have been provided by Big Island artist Dietrich Varez at no cost to HMA. The Editor and Editorial Board asked Council to approve an honorarium to artist Varez. The request was approved.

The Legislature is in full swing and Council reported its position on various bills:

Nurse Prescriptive Authority.—Council voted for HMA to maintain the strongest position of opposition to the granting of nurse prescriptive authority under any circumstances.

Optometry and Naturopathy.—Council voted that HMA oppose SB No. 2600 which would allow optometrists to prescribe medications, diagnose medical conditions and perform surgery, and HB No. 2238 which would change the definition of "natural medicine" to include manufactured substances with molecular structures similar to or identical to those found in nature.

Hawaii Health Alliance.—Council voted that HMA oppose the Hawaii Health Alliance SB 3036.

Health QUEST.—Council voted that HMA support QUEST Bills SB 3112, SB 3245, SB 3244, SBs 2381, 2382 and 2383 which limit or modify the QUEST program with special emphasis on SBs 2381 to 2383.

Community Rating.—Council voted that HMA support SB No. 3058.

HMO Act.—Council voted that SB 3053 be referred back to the Legislative Committee.

Dr Cal Sia is working hard to obtain the Robert Wood Johnson grant available for physicians' initiative in underserved populations of young women with children and families. It is designed to get physicians to liaison with each other so assistance can be given to families in the community. When more concrete information is received, Dr Sia will present it to Council for approval.

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Historical Notes

With all of the publicity on the Clinton Health Care Plan, it might be of interest to look at hospital costs 100 years ago. In the old records in the Queen's historical room we find a fascinating picture of health costs *in the good old days.*

To begin with, the property on which the hospital now stands—9 acres—was purchased in 1859 for $2,000. Shortly thereafter, Dr William Hillebrand was elected as its first physician at a salary of $1,500 a year. Financial problems soon beset the hospital and for a couple of years his salary was reduced to $1,200. A visitor to Queen's in 1861 said: "Dr Hillebrand has but four assistants, namely: a dispenser, a cook and two other native attendants." (A. Vorn in "The Victorian Visitors," May 1861.)

In 1880, the following notice appeared in the local newspaper: "On account of the large increase in the cost of provisions, and the necessaries of life generally, the Board of Trustees of the Queen's Hospital had decided to increase the rate of foreign patients to $1.50 per day, exclusive of expense incurred for wine and watchers." (F.A.Schaefer, Secretary to the Board of Trustees–1880). This resulted immediately in a long, irate letter to the Editor from an Englishman with "feelings of regret and astonishment."

In 1880, the hospital was paying 3.5 cents for a loaf of bread; 8 cents per quart of milk; 2.5 cents per pound of poi. Prime ribs of beef cost 12.5 cents a pound, steaks were 10 cents and there was no charge for liver and tripe!

However, it must be remembered that the average length of stay in those days was 36 days (it had been 42 days in 1861), so everything was relative and prices did add up.

There were no trained nurses at that time, *kokuas* or family members tended the patients until 1893 when two graduate nurses from California arrived. They were paid $50 a month in gold coins.

In addition to the cost of living, there were bargains in the cost of dying. In a letter from the Williams Furniture Company dated 1895, an amazing package deal was offered in the undertaking line: "I will agree to furnish the coffins at three dollars and fifty cents each, and to furnish the hearse and a carriage for the minister for five dollars." (Letter from H.H. Williams, August 8, 1895) The bargain of the century.

Margery Hastert
Historian
The Queen's Medical Center

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† *Relief began in 13% of treated patients vs 4% of placebo-treated patients within 30 minutes (P=.04). At 2 hours, 48% of patients receiving placebo experienced relief. Distribution of onset times was significantly earlier for CLARITIN Tablets vs placebo (P=.03).*

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BRIEF SUMMARY
(For full Prescribing Information, see package insert.)

INDICATIONS AND USAGE
CLARITIN Tablets are indicated for the relief of nasal and non-nasal symptoms of seasonal allergic rhinitis.

CONTRAINDICATIONS
CLARITIN Tablets are contraindicated in patients who are hypersensitive to this medication or to any of its ingredients.

PRECAUTIONS
General: Patients with liver impairment should be given a lower initial dose (10 mg every other day) because they have reduced clearance of CLARITIN Tablets.

Drug Interactions: The coadministration of a single 20 mg dose of CLARITIN Tablets (double the recommended daily dose) and a 200 mg dose of ketoconazole twice daily to 12 subjects resulted in increased plasma concentrations of loratadine (180% increase in AUC) and its active metabolite, descarboethoxyloratadine (56% increase in AUC). However, no related changes were noted in the ECGs taken at 2, 6, and 24 hours after the coadministration of loratadine and ketoconazole. Also, there were no significant differences in clinical adverse events between CLARITIN Tablet groups with or without ketoconazole.

Other drugs known to inhibit hepatic metabolism should be coadministered with caution until definitive interaction studies can be completed. The number of subjects who concomitantly received macrolide antibiotics, cimetidine, ranitidine, or theophylline along with CLARITIN Tablets in controlled clinical trials is too small to rule out possible drug-drug interactions. There does not appear to be an increase in adverse events in subjects who received oral contraceptives and CLARITIN Tablets compared to placebo.

Carcinogenesis, Mutagenesis, and Impairment of Fertility: In an 18-month oncogenicity study in mice and a 2-year study in rats, loratadine was administered in the diet at doses up to 40 mg/kg (mice) and 25 mg/kg (rats). In the carcinogenicity studies, pharmacokinetic assessments were carried out to determine animal exposure to the drug. AUC data demonstrated that the exposure of mice given 40 mg/kg of loratadine was 3.6 (loratadine) and 18 (active metabolite) times higher than a human given 10 mg/day. Exposure of rats given 25 mg/kg of loratadine was 28 (loratadine) and 67 (active metabolite) times higher than a human given 10 mg/day. Male mice given 40 mg/kg had a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) than concurrent controls. In rats, a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) was observed in males given 10 mg/kg and males and females given 25 mg/kg. The clinical significance of these findings during long-term use of CLARITIN Tablets is not known.

In mutagenicity studies, there was no evidence of mutagenic potential in reverse (AMES) or forward point mutation (CHO-HGPRT) assays, or in the assay for DNA damage (Rat Primary Hepatocyte Unscheduled DNA Assay) or in two assays for chromosomal aberrations (Human Peripheral Blood Lymphocyte Clastogenesis Assay and the Mouse Bone Marrow Erythrocyte Micronucleus Assay). In the Mouse Lymphoma Assay, a positive finding occurred in the nonactivated but not the activated phase of the study.

Loratadine administration produced hepatic microsomal enzyme induction in the mouse at 40 mg/kg and rat at 25 mg/kg, but not at lower doses.

Decreased fertility in male rats, shown by lower female conception rates, occurred at approximately 64 mg/kg and was reversible with cessation of dosing. Loratadine had no effect on male or female fertility or reproduction in the rat at doses of approximately 24 mg/kg.

Pregnancy Category B: There was no evidence of animal teratogenicity in studies performed in rats and rabbits. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, CLARITIN Tablets should be used during pregnancy only if clearly needed.

Nursing Mothers: Loratadine and its metabolite, descarboethoxyloratadine, pass easily into breast milk and achieve concentrations that are equivalent to plasma levels with an AUC_{milk}/AUC_{plasma} ratio of 1.17 and 0.85 for the parent and active metabolite, respectively. Following a single oral dose of 40 mg, a small amount of loratadine and metabolite was excreted into the breast milk (approximately 0.03% of 40 mg over 48 hours). A decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. Caution should be exercised when CLARITIN Tablets are administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children below the age of 12 years have not been established.

ADVERSE REACTIONS
Approximately 90,000 patients received CLARITIN Tablets 10 mg once daily in controlled and uncontrolled studies. Placebo-controlled clinical trials at the recommended dose of 10 mg once a day varied from 2 weeks' to 6 months' duration. The rate of premature withdrawal from these trials was approximately 2% in both the treated and placebo groups.

REPORTED ADVERSE EVENTS WITH AN INCIDENCE OF MORE THAN 2% IN PLACEBO-CONTROLLED ALLERGIC RHINITIS CLINICAL TRIALS

PERCENT OF PATIENTS REPORTING

	LORATADINE 10 mg QD n = 1926	PLACEBO n = 2545	CLEMASTINE 1 mg BID n = 536	TERFENADINE 60 mg BID n = 684
Headache	12	11	8	8
Somnolence	8	6	22	9
Fatigue	4	3	10	2
Dry Mouth	3	2	4	3

Adverse event rates did not appear to differ significantly based on age, sex, or race, although the number of non-white subjects was relatively small.

In addition to those adverse events reported above, the following adverse events have been reported in 2% or fewer patients:

Autonomic Nervous System: Altered salivation, increased sweating, altered lacrimation, hypoesthesia, impotence, thirst, flushing.
Body As A Whole: Conjunctivitis, blurred vision, earache, eye pain, tinnitus, asthenia, weight gain, back pain, leg cramps, malaise, chest pain, rigors, fever, aggravated allergy, upper respiratory infection, angioneurotic edema.
Cardiovascular System: Hypotension, hypertension, palpitations, syncope, tachycardia.
Central and Peripheral Nervous System: Hyperkinesia, blepharospasm, paresthesia, dizziness, migraine, tremor, vertigo, dysphonia.
Gastrointestinal System: Abdominal distress, nausea, vomiting, flatulence, gastritis, constipation, diarrhea, altered taste, increased appetite, anorexia, dyspepsia, stomatitis, toothache.
Musculoskeletal System: Arthralgia, myalgia.
Psychiatric: Anxiety, depression, agitation, insomnia, paronirla, amnesia, impaired concentration, confusion, decreased libido, nervousness.
Reproductive System: Breast pain, menorrhagia, dysmenorrhea, vaginitis.
Respiratory System: Nasal dryness, epistaxis, pharyngitis, dyspnea, nasal congestion, coughing, rhinitis, hemoptysis, sinusitis, sneezing, bronchospasm, bronchitis, laryngitis.
Skin and Appendages: Dermatitis, dry hair, dry skin, urticaria, rash, pruritus, photosensitivity reaction, purpura.
Urinary System: Urinary discoloration, altered micturition.

In addition, the following spontaneous adverse events have been reported rarely during the marketing of loratadine: peripheral edema, abnormal hepatic function, including jaundice, hepatitis, and hepatic necrosis, alopecia, seizures, breast enlargement, erythema multiforme, and anaphylaxis.

OVERDOSAGE
Somnolence, tachycardia, and headache have been reported with overdoses greater than 10 mg (40 to 180 mg). In the event of overdosage, general symptomatic and supportive measures should be instituted promptly and maintained for as long as necessary.

Treatment of overdosage would reasonably consist of emesis (ipecac syrup), except in patients with impaired consciousness, followed by the administration of activated charcoal to absorb any remaining drug. If vomiting is unsuccessful, or contraindicated, gastric lavage should be performed with normal saline. Saline cathartics may also be of value for rapid dilution of bowel contents. Loratadine is not eliminated by hemodialysis. It is not known if loratadine is eliminated by peritoneal dialysis.

Oral LD_{50} values for loratadine were greater than 5000 mg/kg in rats and mice. Doses as high as 10 times the recommended clinical doses showed no effects in rats, mice, and monkeys.

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Reference

1. Bédard P-M, Del Carpio J, Drouin MA, et al. Onset of action of loratadine and placebo and other efficacy variables in patients with seasonal allergic rhinitis. Clin Ther. 1992;14:268-275.

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HMA Alliance

Susan Foo, President

This year the HMA Alliance was proud to send Lillian Nishi, HMA Alliance president–elect, and Cherlita Gutteling, Hawaii County Medical Society President, to represent Hawaii at the AMA Alliance Confluence in Chicago. Here is their report:

The emphasis at the Confluence was on *Membership*. Although there are some 270,000 organizations in the nation, they don't address the needs and concerns of the 600,000 physicians. The AMA does—and the AMA Alliance needs to grow. Every physician's spouse should take part in forming the solutions to issues on health care. Now more than ever, membership in the AMA Alliance and the HMA Alliance matters!

Some reasons that spouses of physicians should belong to the Alliance are:

- Spouses need to form a united front for physicians.
- Spouses need to be informed and aware of the issues that physicians are facing in health system reform and medicine.
- Spouses need to work with the state medical association to enact positive legislation and reject deleterious legislation.
- Spouses can create a positive image of the medical family by becoming involved in community activities and fostering health education.

Legislative Update at the Confluence.—The stage is set for a year of historic action in health system reform. The decisions being made in the weeks and months ahead will affect how medicine is practiced far into the future. Everyone of us in the medical community has a critical role to play. What is going to happen to our spouse's practice? Can patients be provided with the care they need? Is there some huge bureaucracy that is going to take over? What is the AMA doing about it?

America's scientific excellence has delivered wonder drugs, technological marvels, longer and healthier lives—*we have the best medical care in the world!* Yesterday's miracles are the mainstream of medicine today. All of this is despite interference, regulation, litigation, bureaucracy's blockage; uncertainty and anxiety that always accompany change. Despite it all, American medicine is unparalleled anywhere in the world. Scientific knowledge by itself is not enough, it needs the human touch.

The AMA has taken a stand that it will not and cannot allow bureaucrats and insurance companies to destroy the patient–physician relationship.

AMA cannot allow politicians to reach for an easy fix by placing caps on costs. AMA is taking action! Virtually every day of the week leaders of the AMA are discussing health system reform with the Administration, leaders of Congress, and key Congressional supporters of various systems.

We had a very informative and exciting trip, and we thank the HMA Alliance for the opportunity to represent our wonderful state.

Cherlita Gutteling, President
Hawaii County Medical Society

Baromedicine Today — Rational Uses of Hyperbaric Oxygen Therapy

Frank L. Tabrah MD, Robin Tanner RN, CHT, Robert Vega RRT, Stanley Batkin MD

Compressed air, and more recently hyperbaric oxygen, have been used and misused in medical treatment for more than 300 years. Advances in physiology have led to rational protocols for hyperbaric oxygen use.

Hyperbaric oxygen will enhance wound healing by fibroblast and capillary proliferation, suppress infection, reduce edema, reverse CNS damage from carbon monoxide and cyanide poisoning, and reduce clostridial alpha toxins.

Monoplace and multiplace chambers are used for treatment during which EKG and oxygen tissue monitoring, as well as hemodynamic and respiratory support, can be continued. Iatrogenic air embolism and diving decompression sickness demand immediate treatment.

Investigative uses of adjunct therapy for several other clinical problems include treatment of MS, acute spinal cord injuries, and acute MI. Specific indications agreed on by the Undersea and Hyperbaric Medicine Society are recognized by most third-party payers including Medicare, Champus, and HMSA. Hyperbaric medicine remains a fertile area for basic physiologic investigation and outcomes research.

Hyperbaric oxygen therapy is a relatively new treatment concept based on diving physiology and the unique effects of oxygen breathed at increased pressure.

Boyle first saw decompression sickness in 1671 in a decompressed viper writhing in a bell jar. Bends were described in 1841 by caisson workers who walked in a contorted way from bubble pain in their joints. More vicious forms of decompression sickness—cerebral and pulmonary air embolism—can result from an iatrogenic accident masquerading as a stroke following cardiovascular surgery and minor invasions such as placement of lines and arterial catheters.[1,2]

Rapid pressurization of patients injured by intravascular air from any source is usually critical to survival, depending on the volume of introduced gas and its final destination, particularly the brain circulation. The risk of cerebral air embolism in both divers and hospital patients is increased by the 25% to 30% incidence of potentially patent foramen ovale through which air passes to the arterial system and brain.[3]

Other situations, primarily CO poisoning, smoke inhalation, gas gangrene, necrotizing infections and crush injuries respond favorably to hyperbaric oxygen; not because of pressure alone, but because of other arcane results of increased oxygen tension in perfused tissues, such as antibacterial effects, stimulation of angiogenesis, and suppression of the reperfusion syndrome.[4-9]

Hyperbaric medicine is defined by the Undersea and Hyperbaric Medical Society (UHMS) as "a therapeutic technique using air or other gas mixtures at greater–than–atmospheric pressure for short intervals, over days or months, to treat various disease states." World War II research led to the wider use of 100% oxygen in decompression sickness—from this work, other physiologic effects of hyperbaric oxygen were found that have led to the presently accepted uses approved by the UHMS and most third-party payers. [10, 11]

Despite 5 international hyperbaric conferences, support of the New York Academy of Sciences, and rigorous annual UHMS committee reports, charlatanism has been a problem, now offset by peer–reviewed articles in specialty journals.

Hyperbaric Medicine in Hawaii

Hawaii, as a sports–diving area and the locale of U.S. Navy submarine work during and since WWII, has been prominent in decompression and therapeutic hyperbaric research.

After 1962, physicians and basic faculty members of the Department of Physiology, University of Hawaii John A. Burns School of Medicine, (Hong S, Lin Y, Strauss D, Yount D, Beckman E, Lally D, Hayashi E) developed in vitro decompression models in gelatin to refine decompression protocols. In April 1983 a facility (HTC) was developed by the State of Hawaii at Kewalo Basin for treatment of bends patients and also accepted cases requiring hyperbaric oxygen for other indications. HTC serves the diving community and has continued diving research. It plans expansion to a local hospital setting; however, at present, HTC is treating approximately 100 divers a year for accidents, and approximately 20 other patients who receive hyperbaric oxygen therapy.

Diving Accidents and Deaths

Causes of diving deaths in Hawaii were analyzed by C. Edmonds (UHMS meeting, October 1992, Fairfield, Calif.) in a paper entitled "Diving Deaths in Paradise." Causes were similar to those in Australia and New Zealand:

During training	15%
During black coral dives	12%
Drowning (usually fatigue)	61%

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Barotrauma	15%
Cardiac deaths	9%
Decompression sickness	5%

Human factors such as lack of judgment and preparation contributed to 44% of the deaths, equipment problems, 40% and sea conditions, 56%. In the U.S. as a whole Diver's Alert Network (DAN), which analyses most sports-diving accidents, reports an overall diving accident rate of 0.2%, based on 80,000 dives. In 1989, 32% of all injured divers were using dive computers, 68% theoretically were using dive tables, probably poorly if at all. Despite excellent local opportunities for training, many Hawaiian sports divers largely ignore decompression limits in a macho style that invites bends and in the long-term, osteonecrosis. Compounding this problem is the prevalence of yo-yo diving—multiple dives daily with very short surface breaks; neither dive tables nor computers are designed to manage more than 2 or 3 dives a day. Nor does any present computer or table address the cumulative gas load of many successive days of multiple dives, often as many as 6 or more daily. Like gravity, the fundamental gas laws cannot be ignored.

In June 1989, a hyperbaric center was opened at Straub Clinic and Hospital and at present it accepts only patients requiring treatment for problems other than diving accidents. Since opening, more than 200 patients have received treatment courses averaging 30 ninety–minute compressions at 2 to 3 atmospheres of oxygen over 30 days. Indications for treatment were:

Preparation for plastic procedure	21%
Necrotizing soft tissue infection	15%
Peripheral arterial insufficiency, acute	15%
Diabetic foot ulcers	15%
Radionecrosis (bone or soft tissue)	12%
Other	21%

Because of the very high incidence of diabetes and its vascular complications among Hawaiians (nearly 5 times the rate for Caucasians) leading to refractory osteomyelitis and limb loss, a retrospective and prospective study of outcomes with and without adjunctive use of hyperbaric oxygen in refractory osteomyelitis has begun with Straub Foundation support.

Recent wider understanding and acceptance by Hawaii physicians of hyperbaric medicine following residency and CME training at baromedicine centers has greatly increased inpatient and outpatient referrals to Hawaii's 2 hyperbaric treatment sites.

Physiology and Clinical Applications

When breathing air under normal conditions, 98.4% of the available oxygen is bound to hemoglobin. The remaining portion is dissolved in plasma. Because hemoglobin is 97% saturated by inspired air, changing to a breathing source of straight oxygen changes hemoglobin-delivered oxygen by only 3%. The remaining oxygen will be dissolved in the plasma. For each additional atmosphere of pressure, the amount of additional oxygen dissolved in plasma is 2.3 vol%. Thus at about 3 ATA (3 atmospheres, absolute pressure, the maximum working pressure for most HBO treatment) more than 6 vol% is carried in the plasma. Because the tissue requirement for oxygen is roughly 5 vol%, enough oxygen is carried in the plasma alone to fully support life. Normal peripheral tissue oxygen tensions measured through the skin approximate 40 mm Hg; at treatment levels, this can be raised to over 2200 mm Hg, with remarkable local tissue effects.

Fibroblastic proliferation, collagen production, and neovascularization with resulting growth of granulation tissue occur in the presence of intermittent tissue hyperoxygenation. Under oxygen pressure, the diffusion distance of oxygen increases 2 to 3 times, which assists in the delivery of oxygen to hypoxic areas in healing wounds, enhancing the various elements of healing, particularly angiogenesis, of great interest in radiation necrosis of bone and soft tissues.

Months or years after radiation for malignancy, a few patients develop disabling clinical disease of soft tissue or necrotic bone that can be progressive, painful, and potentially fatal due to tissue breakdown and loss of protective barriers.[12,13,14] Even patients who do not develop such overt clinical disease can have radiation tissue damage which can be progressive and could develop later into overt disease with increased risk of infection, wound dehiscence, tissue loss, and graft loss when surgeries are required in irradiated tissues.[15,16,17,18]

The pathophysiology includes endarteritis, inflammation, fibrosis, and hypoxia—clinical states include radiated bowel syndrome, radiation mucositis, soft tissue radionecrosis, and laryngeal radionecrosis. Compromised tissues invite secondary infections, gangrenous bowel, cellulitis, fascitis, and hemorrhagic cystitis. Hyperbaric oxygen has been successful in management of the cystitis and other soft tissue problems involving infection and restoration of adequate vascularity.[19,20,21] Case management includes both pre– and post–operative treatment.

In the presence of bacterial infection the phagocytic leukocyte is an important defense. Although the ingestion of bacteria can be an anaerobic function, effective killing requires oxygen as a substrate. Increased levels of molecular oxygen are converted by the leukocyte into high energy radicals (the superoxide free radical, hydrogen peroxide, and the hydroxyl radical), all toxic to bacteria.[22] Since active infection in a rabbit tibia by *Staphylococcus aureus* has been shown by Mader[23] to reduce tissue oxygen levels to half that necessary for leukocytic function, and addition of oxygen by hyperbaric pressure effectively restores the killing action, a rationale exists for *adjunct* use of hyperbaric oxygen in refractory infections of bone, and in overwhelming soft tissue infections. The combination of adequate debridement, antibiotics, and hyperbaric treatment are most effective in preventing recurrence. The dramatic effect of hyperbaric oxygen on clostridial and other anaerobic infections is well established clinically, although the exact mechanism of suppression of alpha toxins is not understood.[24]

Another interesting effect of increased oxygen tension is a 20% to 50% reduction of blood flow, primarily through arterial vasoconstriction, without reduction in oxygen availability because of the greatly increased amount of oxygen carried in

solution.[25] This vasoconstriction is reported to be of clinical value in reducing edema, tissue loss, and scarring in burn patients,[26] and prompt reduction of compartment pressures in compartment syndrome.[27]

Recent interest in the reperfusion syndrome has ranged across many tissues, including brain, heart, and skeletal muscle. In vivo histologic and chemical studies by Zamboni[28] show that in rat muscle, ischemia causes "sticking and rolling" of neutrophils on venule walls accompanied by the release of thromboxane and other vasoactive substances into the interstitium, causing vasoconstriction of adjacent arterioles and further ischemia. This process appears to be related to superoxide production by the neutrophils and action can be blocked by high oxygen tensions.

In the experimental model, exposure to hyperbaric oxygen within 12 hours of reperfusion altered the usual free–radical pathway to produce harmless hyperperoxyl radicals that react with lipid radicals to form nonradical products, probably reducing lipid peroxidation.[29] Further clinical trials of the use of hyperbaric oxygen to reverse the baleful microvascular events that accompany reperfusion are necessary. Present interest centers around CVA, cord injuries, crush injury, compartment syndrome, and acute MI.

In unpublished data, Youngblood and others[30] report prompt relief of migraine headache and its associated symptoms in more than 90% of patients within minutes after compression, probably on the basis of vasoconstriction. Cerebral edema of various origins has been considered an indication for hyperbaric oxygen therapy, but current clinical information does not support this use.

In carbon monoxide and cyanide poisoning, past teaching has stressed the importance of loss of oxygen transport by hemoglobin linkage, leading to CNS anoxia, collapse, and death. Recent research indicates the loss of oxygen transport is of little significance compared with the direct effect of CO or CN on CNS cells, which primarily impairs mitochondrial cytochrome by binding to cytochrome c oxidase.[33] Also, lipid peroxidation damage occurs; both insults are reversible by use of hyperbaric oxygen, but not with the use of oxygen at ambient pressure.[32]

If CO poisoning is suspected, carboxyhemoglobin determinations are of little use, since low levels can be found in patients with already serious brain damage from direct CO/cytochrome c oxidase binding. High carboxyhemoglobin levels are simply confirmatory of CO exposure and are not even of much prognostic use. Careful clinical evaluation, particularly of cognitive and neurologic function, is essential to making an accurate diagnosis of CO poisoning and selecting a choice of therapy. If there is any doubt about the degree of CO or CN exposure, hyperbaric oxygen treatment is essential in reducing the very real risks of late sequelae that often result in permanent cognitive or psychiatric disorders.

Although hyperbaric oxygen does not in any way replace conventional management, several researchers have found it to be an important adjunctive measure in treatment of thermal burns. Its beneficial effects were discovered accidentally when Wada in Japan used hyperbaric oxygen in treating burned coal miners for associated CO poisoning. The burns of the treated miners healed faster than the burns of the untreated miners. Since then, a growing body of research has shown hyperbaric oxygen to be effective in treatment of thermal injuries.[34,35,36,37]

Beneficial effects include: Reduction in fluid requirements during the initial resuscitation phase, a reduction in edema formation, improvement in the microcirculation, and faster epithelization and neovascularization. Fibrinolysis is activated, leading to earlier capillary patency. Perfusion is improved, with less fluid loss, and conversion of second- to third-degree burns appears to be lessened. Because of the earlier epithelization and neovascularization, grafting is possible sooner.

Treating 138 patients with adjunctive hyperbaric oxygen, Hart reported a reduction of mortality of nearly 30% when compared with an untreated control group. Accelerated wound healing occurred and fluid requirements were reduced nearly 35% during the initial resuscitative period. In this study, mean healing time for the treated group was 19 days and 44 days for the untreated group. Cianci reported reduction in the length of hospital stays averaging 43 days compared to 73 days for those not treated, and a reduction by nearly half of necessary surgical procedures.

To achieve maximum benefits, treatment of burns must be started within 24 hours of injury, preferably sooner. Complex life support can be maintained in the chamber.

The treatment of decompression sickness or bends in its many forms is of course a fundamental use of hyperbaric air, or preferably, oxygen. Bends treatment has a long history of trial and error leading to the many treatment protocols known as tables developed by their various users worldwide. Recent changes in treatment of decompression sickness have moved toward the use of 100% oxygen at up to 3 atmospheres of pressure, rather than the older routines using air or prepared inert gas-oxygen mixtures starting at 5 or 6 atmospheres of pressure. Various routines are still under investigation since much of the pathophysiology of decompression sickness remains unclear at the tissue and molecular level.[38]

Equipment

Hyperbaric therapy is given either in a monoplace or multiplace chamber. The commonly used monoplace Sechrist chamber is a double-walled acrylic cylinder into which the patient is placed on a movable stretcher, rolled inside on rails from a mating transport gurney, Fig 1. Special ports in the chamber door allow respirator operation, EKG, hemodynamic monitoring, tissue oxygen monitoring, and intravenous infusions. Controls for chamber operation are on the unit, allowing the operator close contact and communication with the patient, important in allaying anxiety and pressure–change problems. Most treatment protocols for use in this type of chamber use 100% oxygen at 2 to 3 atmospheres of pressure, with *air breaks* during longer routines.

Multiplace chambers are large walk-in installations accommodating many patients, often with their attendants, Fig 2. Chamber pressure usually is provided by air, with single gases

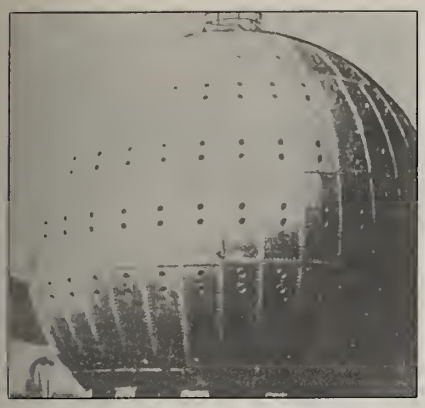


Fig 1.—Cunningham's 5 story, 60 room hyperbaric chamber in Cleveland, Ohio.



Fig 2.—Monoplace acrylic chamer with access gurney.



Fig 3.—Multiplace chamber with air locks allowing entry and exit of attendants during treatment.

or gas mixtures tailored to patient needs given by mask or hood within the chamber. Most of the indications for hyperbaric therapy can be met in either type of chamber and each has its advantages.

Transportable chambers now are available that can be pressurized in transit and carried in a small plane or vehicle, Fig 3. These chambers often allow space for an inside attendant, have air lock provisions, and can be linked to a larger chamber.

Because of the urgency of immediate repressurization of bends patients and the risks of transporting them in only partially pressurized airplane cabins, Hawaii's need for dependably staffed chambers on other islands or pressurized, transportable equipment for air ambulance use is clear.

Equipment for the non-invasive measurement of tissue oxygen levels has attracted recent interest. Calibrated electrodes connected to a readout unit are placed on the skin, allowing real–time determinations of oxygen perfusion (TcPO2) into questionable areas near wounds, grafts, or amputation sites, providing a fair indication of healing potential. Adjacent to ulcerations, for example, an oxygen level of less than 30 mm Hg that fails to rise promptly to several hundred mm at 2 ATA of oxygen portends treatment failure even with hyperbaric oxygen. Failure to heal is virtually certain, whereas a rapid rise to several hundred mm Hg appears to signify adequate healing potential with adjunct hyperbaric treatment, after which wounds usually remain healed for at least a reasonable time.[39] For the TcPO2 to be of significance, macrocirculation must be competent; measurement is then of the oxygen perfusion capability of the micro circulation, equally critical to wound healing. Further refinement of the predictive value of TcPO2 determinations at room air and under oxygen pressure will improve treatment decisions, both in plastic procedures and in the management of ulcerated feet and legs.

Barotrauma and Oxygen Toxicity

Hyperbaric therapy, involving Boyle's law (change of volume inversely with pressure) involves some constraints and cautions. Asthmatics, those with COPD, lung cysts or blebs, or with a history of lung collapse can develop pneumothorax on decompression. Similarly, patients with ear or sinus problems can encounter difficulties on compression or decompression; *needle myringotomies* are a simple solution for threatened eardrums.

➤ *Continued on page 119*

Table 1.— Investigational Indications

Nerve grafts.—Rats, controlled study, cut sciatic N., significant increase in neurone regrowth and 4 myelin production. (P=.0005)

Multiple sclerosis.—Patients, 37, 1 year controlled study, 12/17 showed improved mobility, balance, bladder function. 19/20 (controls with placebo[41] compression) deteriorated or not improved in 1 year.

Brain injury.—Patients, 99, contusion or intracranial hematoma, half treated with HBO, treated group, 33% recovery; control group, 6%[42] recovery.

Brown recluse spider bite.—Rabbits, controlled study. 58 ID injections of venom. Lesions produced: HBO treated, 1.7 cm[43], saline controls, 3.4 cm.

Fracture healing.—Rats, standardized femur fracture. HBO–treated animals healed in 3/4 of time of untreated controls.[44]

Pyoderma gangrenosum.—Patients, 6, 3 independent reports, after HBO, all patients healed with or without grafts.[45,46,47]

Retinal vein leakage.—Central retinal occlusion patients, 14, all improved vision with Cystoid macular edema HBO. No contols; all patients treated[48,49,50] as last resort for major visual loss.

MI.—Dog studies, LAD coronary a. occlusion, thrombolytics and HBO. 97% restoration of enzyme function, controls, 48%. Patients, 208, mortality reduced by half,[51,52] with use of HBO.

Migraine patients, 2 studies, 90% of patients[30,53] relieved within 1 hour of HBO treatment.

Helicobacter Pylori Infection and Chronic Active Gastritis

Min Sang Ro MD, Hong-Yi Yang MD, PhD, Ronald J. Pang MD, Glenn M.L. Pang MD

Helicobacter pylori (H. pylori) is an S-Shaped, gram-negative bacillus that recently has been implicated in the pathogenesis of chronic active gastritis and other peptic ulcer disease.[1,2,3,4] These findings have encouraged gastroenterologists to provide a new rationale for patient management, with hope of providing more successful treatment of peptic ulcer disease, particularly gastritis. Therefore, a cooperative diagnostic effort was made at the pathology laboratory of St Francis Medical Center to adopt a simple and reliable method for the identification of H. pylori in tissue sections of endoscopic biopsies of stomach and duodenum.[5] We attempted to estimate the prevalence of H. pylori infection in patients biopsied for upper GI disorders who were refractory to medication. A prevalence of H. pylori infection among different ethnic groups also was studied.

Materials and Methods

Five hundred forty-two consecutive cases were studied by means of gastric and/or duodenal endoscopic biopsies in a 1-year period from October 1989 to September 1990. Each case was examined for histological evidence of gastritis and classified according to the criteria of Whitehead.[6] The presence of increased numbers of lymphocytes and plasma cells in the lamina propria was considered to be indicative of chronic gastritis. Specimens with features of chronic gastritis and a neutrophilic infiltrate in the lamina propria or in glandular epithelium were considered to reflect chronic active gastritis. Atrophic changes and intestinal metaplasia were recorded separately.

Excluded from this study were cases with incomplete clinical information and cases of malignancy or post-operative biopsies taken from the anastomosis sites.

The identification of *H. pylori* was made by studying duplicate slides stained with a modified Wright-Giemsa stain or DiffQuik stain, a product of Baxter Healthcare Corporation in McGraw Park, Illinois. A case was considered to be positive for *H. pylori* only if a small group of S-shaped, bacilli were identified either on or near the mucous surface of the epithelium or in the gastric pits.[5] In equivocal cases, multiple step-sections were searched and double-checked by a second pathologist.

Demographic data of patients were gathered from information provided by the attending clinician from a review of their medical records. Differences between groups were observed by the X2 test: $p<0.05$ was considered significant.

To study the anatomic distribution of the *H. pylori* infection, 5 gastrectomy specimens resected from the patients with duodenal ulcers were sampled according to anatomic areas, such as duodenal cuff, pylorus, antrum and body of the stomach. Gastritis and duodenitis were similarly scored for the presence of *H. pylori*.

Results

***H. pylori* in chronic active gastritis (CAG).**—Our studies showed an overall positivity rate for *H. pylori* of 38.7% (210/542), and an incidence rate for chronic active gastritis of 48.5% (265/542). Of the 210 positive cases, 94% (198/210) revealed chronic active gastritis, representing the highly significant correlation between *H. pylori* colonization and CAG, ($p<0.01$), Table 1.

A small number of cases of chronic non-specific gastritis showed (10/159) *H. pylori* positivity and only 2 of 118 cases of histologically normal gastric mucosa were positive for *H. pylori*.

There were 17 cases of endoscopically diagnosed and biopsy-proven duodenal ulcer cases in our study. Ten of these 17 cases (58%) were positive for *H. pylori*. Organisms were not found in

Table 1.—Correlation Between Inflammation and Presence of *H. Pylori*

Histological category	No. of Patients	*H. Pylori* Positive	Negative	P*
Normal	118	2	116	—
Chronic non-specific gastritis and borderline gastritis	159	10	149	>0.05
Chronic active gastritis	265	198	67	<0.01
Total	542	210	332	

* In comparison with normal tissue

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the necrotic debris which probably originated from the necrotic ulcer crater.

In addition, a total of 79 gastric ulcer cases were included in our study. Of these, 36 cases (45%) were positive for *H. pylori* organisms.

Sex, age and ethnic distribution.—Among all the *H. pylori* positive cases, 108 were in men (51%) and 102 were in women. Our average study population was aged 60, ranging from 21 to 92, Table 2. The highest prevalence of *H. pylori* infection was

Table 2.— Age Distribution of *H. Pylori* Infection

Age group	Male	Female
Less than 30	4	2
31 to 40	11	14
41 to 50	10	12
51 to 60	21	17
61 to 70	31	23
71 to 80	22	22
Older than 81	9	12
Total	108	102

observed in the 61 year to 70 year age group in both men and women. Over 56% of *H. pylori*-positive cases belonged to the over-60 age group. The prevalence of *H. pylori* infection in different ethnic groups is shown in Table 3. In Chinese patients, it was positive in 48.5% (66/136); in Filipinos, 41.8% (62/146); in Japanese, 27.5% (25/91); in Caucasians, 29.6% (27/98); in Hawaiians or part Hawaiians, 45% (16/35); in southeast Asians, 53% (7/13); and in Koreans, 47% (9/19). The differences observed between the 4 larger ethnic groups, Chinese, Japanese, Caucasians and Filipinos, are statistically significant.

Topographic distribution.—Among all of the positive cases, *H. pylori* was most frequently identified in the antrum (79.6% of all positive cases), followed by the body (22%) and cardia (14%). Only 7% of the positive cases were from the duodenum.

There were 142 cases of multiple-site biopsies taken from 2 or more anatomically different locations. Among these cases, 74

Table 3.—Ethnic Distribution of *H. Pylori* Infection

Ethnic group	No. of patients	Hp+	Percentage
Chinese	137	66	48.2
Filipino	147	62	41.1
Caucasian	99	27	27.2
Japanese	92	25	27.1
Hawaiian and Part Hawaiian	35	16	45.7
Korean	19	8	42.1
Southeast Asians	13	6	46.1
Total	542	210	38.7

were all negative and 31 were positive for *H. pylori*. The remaining 37 cases showed mixed results, eg, positive at one site and negative at another. In these, all antral biopsies were positive for *H. pylori*. Of 26 cases with multiple-site biopsies, which included duodenum as one of the sites, all duodenal biopsies were negative for *H. pylori*. Five partial–gastrectomy specimens from patients with perforated or bleeding duodenal ulcers were sampled from different anatomic areas and were scored for the presence of *H. pylori*. The results indicated a predominant antral-pyloric distribution of *H. pylori*.

Discussion

The causative relationship between *H. pylori* and chronic active gastritis was first postulated by Marshall and Warren in 1984.[1] Since then, investigators throughout the world have confirmed that observation and have recognized the pathogenic correlation between *H. pylori* and chronic active gastritis.

Many studies have linked *H. pylori* infection with peptic ulcer disease in general.[2,3,4,7] This has generated new enthusiasm and rationale in patient management and new understanding of inflammatory gastroduodenal diseases.

Hawaii offers a relatively unique opportunity for studying the incidence of diseases in different ethnic groups that is unequaled in any other part of the United States because of the great diversity of races making up its population in a relatively small, confined geographic area.

As clinicians have become increasingly aware of the significance of *H. pylori*, they have gradually increased the number of requests for the identification of *H. pylori*. Therefore, we designed a study to assess the prevalence and the ethnic distribution of this infection in order to get a better understanding of the epidemiology of *H. pylori* infection.

The pathology laboratory at St. Francis Medical Center had adopted a modified Wright-Giemsa stain in 1989 to study *H. pylori* in tissue sections. We found this modified Wright-Giemsa stain to be much simpler and less costly than the Warthin-Starry stain first used by Marshall and Warren.[1] Ours is a reliable and reproducible method that can be used on a routine basis and also allows the best correlation between bacterial identification and tissue diagnosis.

Based on our study, the overall prevalence rate of *H. pylori* infection in our endoscoped patient population was 38.7%, with the prevalence somewhat equal in both men and women. There was a highly significant correlation between *H. pylori* infection and chronic active gastritis. There was also an age-related correlation consistent with the observations of others.[8,9,10,11] Ninety–three percent of *H. pylori*-positive cases were afflicted with chronic active gastritis. Biopsy-proven gastric and duodenal ulcer cases revealed approximately 45% and 58% positivity with *H. pylori*.

Our study did not look into a clear pathognomonic relationship between *H. pylori* infection and peptic ulcer disease. The 5 gastrectomy specimens from patients with perforated or bleeding duodenal ulcers showed a patchy distribution of *H. pylori* in the antral mucosa; the duodenal mucosa near the ulcers were consistently negative for *H. pylori*.

Our results revealed a racial prevalence of *H. pylori* infection that did not correlate well with the known incidence of duodenal ulcer disease reported in Hawaii.[12] Therefore, ulcerogenic etiologic factors appear to be much more complicated and more studies are needed.

Racial differences of *H. pylori* infection have been reported by others[8,9,13] and have raised questions about factors associated with transmission and socioeconomic conditions that cause clustering of the disease and person-to-person, fecal-oral route of transmission.[13,14,15] Preventive measures could be initiated when more epidemiologic information can be obtained.

Summary

A study of 452 consecutive biopsied patients suffering from upper gastrointestinal symptoms demonstrated the following: (1) By histopathologic examination, a total of 210 patients (38.7%) were positive for *H. pylori* and a total of 265 patients (48.5%) had chronic active gastritis. Men and women are equally affected and over 50% of infected patients were older than 60 years of age. Chinese, Filipinos, and Hawaiians had a much higher prevalence as compared to Japanese and Caucasian patients. (2) There is a highly significant correlation between chronic active gastritis and *H. pylori* colonization. Among all *H. pylori* positive cases, 93% had chronic active gastritis. (3) A patchy colonization was noted and more than 75% of positive biopsies were from the gastric antrum. Few positive results were obtained from the biopsies at other sites.

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For obtunded patients or for prolonged treatment courses in difficult situations, tympanotomy tubes often are placed.

Oxygen toxicity, even in ordinary bedside use, places limits on treatment times and pressures. Since maximum allowable exposures to oxygen are well known, safe time and pressure limits are followed. Toxicity usually manifests itself by nausea, chest discomfort, apprehension, and occasionally convulsions which are not fatal and cease on discontinuation of oxygen.

Summary

Currently, there are 12 firmly accepted indications for hyperbaric oxygen therapy that are agreed on by the UHMS. Reimbursement agreements exist with Medicare, Champus, and most third–party payers including Hawaii Medical Service Association (HMSA).

1. Air or gas embolism
2. CO poisoning and smoke inhalation CO complicated by CN poisoning
3. Gas gangrene
4. Crush injury, compartment syndrome, and other traumatic ischemias
5. Decompression sickness
6. Enhancement of healing in problem wounds
7. Exceptional blood loss (anemia)
8. Necrotizing soft tissue infections
9. Refractory osteomyelitis
10. Radiation tissue damage
11. Skin grafts and flaps (compromised)
12. Thermal burns

For investigational indications, see Table 1.

Hyperbaric oxygen therapy can be either an inpatient or outpatient procedure, depending on the acuity and severity of the clinical situation. Since hyperbaric treatment is adjunctive to other care, patients referred to hyperbaric facilities usually remain in the care of the referring physician.

In properly selected cases, adjunctive hyperbaric oxygen will improve treatment outcomes. Success depends on several factors, including the degree of impairment of tissue perfusion, associated systemic disorders, and the extent of tissue damage prior to initiating hyperbaric therapy. In acute problems such as CO poisoning, smoke inhalation, or trauma impairing tissue perfusion, early consultation is needed.

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LOOKING FOR AN AUTOMATED PRACTICE MANAGEMENT SYSTEM?

Hawaii Patient Accounting Services (HPAS) offers a comprehensive mix of practice management solutions, one of which can fit your needs:

OPTION 1

HPAS can take handwritten patient registration and encounter information and do billing and collection for a flat percentage of total collections. This option is intended for small practices, which do not need or want any computers on site, and can be changed to another option as the practice grows.

OPTION 2

Your staff can enter patient registration and encounter information directly into HPAS's computer, over high-speed dedicated or dial-up phone lines, using one or more workstations that HPAS installs (or your existing PCs or Macs), and HPAS will do billing and collection for a flat percentage of total collections. This option is intended for practices with sufficient staff to do the data entry and want to have direct access to their data.

OPTION 3

HPAS can sell you the hardware and software to do everything yourself. HPAS would provide installation, training, and software upgrades. This option is intended for practices of sufficient size to maintain their own computer system.

HPAS uses "Pacific Area Medical Manager" (PAMM), a comprehensive clinic management system locally developed for the specific needs of the Hawaii healthcare marketplace, featuring integrated accounts receivable and patient health monitoring capabilities. Using PAMM, you can monitor your patients' progress using on-line analysis of historical vital signs, screening examinations, and immunizations. PAMM's features also include electronic claims filing and payment with HMSA, Medicaid, and Medicare; electronic collection assignment; and laser-generated claims and statements; among others.

For more information about how HPAS can help your practice, contact April Wolfe, Johnnie Tai, or Bill Shanks at **696-1558**.

HPAS **Hawaii Patient Accounting Services**

"Setting Hawaii's physicians free"

News and Notes Henry Yokoyama, MD

A Golfer's Prayer

The Pro is my shepherd, I shall not slice.
He maketh me to drive straight down green fairways,
He leadeth me softly across still water hazards,
He restoreth my approach shots,
He leadeth me in the path of accuracy,
For my game's sake,
Yea, though I chip through the roughs;
in the shadow of sand traps,
I fear no bogeys, for his advice is with me,
His putter and irons they comfort me
in the presence of my opponents,
He anointed my head with confidence,
The cup will not be runneth over;
Surely birdies and eagles, shall follow me
All the rounds of my life,
And I will score in the sixties (Maybe low seventies),
Forever and ever, amen.

Life in these parts

Hawaiian Rent All sign:
"In God We Trust... All Others Cash Please."
(Brief commentary on the depressed economy?)
License Plates:
Late model pale blue Jaguar with the message: "4 MY LUV"
White Honda CRX driven by a youthful oriental male: "I M COOL"

The 10th Great Aloha Run

Our favorite columnist **Bob Krauss** describes the Great Aloha Run (with its 32,000 people hoofing the 8.2–mile course between Aloha Tower and Aloha Stadium) "...as a cross between a cattle stampede and a subway rush hour." Bob reports, "Heart specialist **Bill Dang** got beat by his heart transplant patients. Kidney transplant patient Elvis Pantil bested his nurse. Fourteen heart, liver and kidney transplant patients from St. Francis Medical Center finished the event."

Babies and HIV

With the report that AZT administered to HIV–infected women during pregnancy lowered the transmission rate to their children from 25% to 8%, **Marian Melish**, medical director of the Pediatric Immunology Clinic at Kapiolani Medical Center says, "We should be identifying women and putting those who are HIV positive on AZT. There doesn't seem to be any short–term risk to mother or child. Studies show that screening only high–risk women fails to pick up 50% of those with HIV infection."

Health director **John Lewin** says, "We could achieve 99% screening if we make HIV screening part of the prenatal workup. We have 20,000 births a year in the state and each HIV–positive infant costs us a couple of hundred thousand dollars in medical care. Even if we prevent just one child from becoming HIV positive, we have a cost–effective program." (Since 1982, we have had eight children who developed AIDS from their mothers.)

The Souki health reform plan

Representative Joe Souki and several fellow legislators attended the annual HMA Legislative Reception on February 7. The representative, seeing so many physician spouses present was heard to comment: "You ladies have a health plan better than Clinton and Cooper. You married a doctor." (Submitted by our editor, Norman Goldstein)

Quotables

"Nothing is work unless you'd rather be doing something else." (George Halas)
"The best thing for crabgrass is resignation." (A Franklin Jones in *Quote Magazine)*

Elected, appointed & honored

Endocrinologist **Werner Schroffner** was named The Queen's Medical Center chief of staff for 1994. Cardiologist **Robert Hong** was named chief of staff–elect.

The Honolulu County Medical Society elected **Leonard Howard** president, **Danelo Canete** president–elect, **Kim Marie Thorburn** secretary and **William Dang, Jr.** treasurer.

Entrepreneurs

Straub Clinic and Hospital plans to compete with Kaiser Permanente by offering a new HMO without the health insurance middleman viz HMSA. Straub President **Blake Waterhouse** thinks this will make care more cost–effective. If approved by state officials, Straub expects to offer the plan in early 1994.

The Kaiser Permanente health care plan meanwhile plans to allow members willing to pay higher premiums to see nonKaiser doctors. This *point-of-service* program has already been developed in the Mainland, but is in the planning stage in Hawaii. The program reflects the growing demand by consumers to allow nonKaiser doctors to participate in member's health coverage. More than 190,000 Hawaii residents use Kaiser's 13 clinics and Kaiser Medical Center in Moanalua, making Kaiser the state's largest health maintenance organization.

Anxiety profiles

(from a symposium held at Pacific Beach Hotel on February 26, 1994)

Speakers: **Frederick Engstrom**, Clinical Assistant Professor of Family Practice, Dept. of Psychiatry, U of Minnesota; **Warren Heffron**, Professor of Family & Community Medicine, U of New Mexico (Sponsored by an educational grant from Mead Johnson pharmaceuticals)

Introduction by **Robert Rakel** (Chairman): "Anxiety disorders is one of the most invisible, but debilitating of all psychiatric disorders. Two out of every 10 Americans may present a clinically recognized anxiety disorder during any six month period and one out of every four patients in family practice may suffer from anxiety..."

Fred Engstrom: CAGE test for alcoholism. Question: "Describe your alcohol use." The magic numbers are "6" for women and "8" for men. Ask a woman, "How would 6 drinks affect you?" Ask a man, "How would 8 drinks affect you?"

Family history of alcoholism or depression is useful; there is a possible genetic factor.
Most common anxiety disorder:

1. Acute situational anxiety
2. Persistent underlying anxiety
3. Adjustment disorder with anxious mood
4. Generalized anxiety disorder
5. Mixed anxiety and depression
6. Panic disorder

Less common anxiety disorders:

1. Post–traumatic stress disorder
2. Phobias

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Ron Li
Projects Manager

3. Obsessive-compulsive disorder

Five SYs + SXs re Post–Traumatic Stress Disorder (eg, childhood sexual abuse):
1. Unexplained pelvic pain
2. Chronic insomnia
3. Chronic headaches
4. Irritable bowel
5. Obesity

"Hand on the doorknob syndrome" (viz time is up and next patient is waiting) If worried about your anxious patient, ask point blank, "Are you suicidal?"

Freudian slip (a joke): A depressed woman at dinner meant to say to her mother-in-law, "Please pass the salt," but instead blurts out, "You stupid woman—You screwed up my life."

The average internist interrupts the patient every 18 words.

Cartoon Quip: Doctor in a white coat wants to say to his patient: "I'd like to slap you in the face," but instead says, "Take this prescription and call me in 3 or 4 days if you're not better."

Warren Heffron, Brief Psychotherapy: Maintain quality of time (keep your interruptions to a minimum), convey a sense of caring and concern, listen with your "third ear," ask direct questions to elicit new perspectives (Should be open ended), try to understand human imperfections, ask, "What can we do about it?" Give home assignment, ie, list all possible reasons, look for unresolved *guilt, fear or abuse*.

Commonalities Among Psychotherapy Techniques: Expectation of help, participate in therapeutic relationship, get external perspective, encourage corrective exposure, give opportunity to test reality.

Role of Exercise in Stress Reduction: Improves general muscle tone; reduces borderline heart rate; reduces borderline respiratory rate; improves general well-being.

Fred Engstrom.—Drug therapy for anxiety disorders and anxiety conditions:

Acute situational anxiety ---------- benzodiazepines
Persistent underlying anxiety ------ BuSpar (buspirone)
Adjustment disorder with anxious mood -------- BuSpar
Adjustment disorder with depressed mood ---- tricyclic antidepressants
Generalized anxiety disorder ---------- BuSpar or benzodiazepines
Mixed anxiety and depression anxiety component ----- BuSpar
Depressed component ---------- tricyclic antidepressants or SSRIs (avoid Prozac)
Panic disorder ---------- tricyclic antidepressants (imipramine, desipramine), benzodiazepine (Xanax)
Obsessive-compulsive disorder --------- SSRIs (Zoloft, Paxil), antidepressants (colmipamine).

How to wean from benzodiazepines:
a. Taper off 10% every week.
b. Monitor patient with return visits.
c. If unable to stop benzodiazepine, add BuSpar.

Laughter—the magic medicine

What is laughter, but a natural expression of man's reaction to the absurdity of the world around him. Nowadays we know that laughter can be therapeutic, can even lengthen one's life—and so, we might well improve on that old expression, "He who laughs last, laughs best" and add "and laughs longer."
(From *Robins Reader*, Spring/Summer 1990)

Classified Notices

To place a classified notice:
HMA members, please send signed and typewritten ad to HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.
Nonmembers: Please call 536-7702 for a non-member form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Services

Medical billing services. Patient statements, EMC claims processing, accurate management reports. Personalized service, affordable rates. Call Linda at MEDCON, 247-0591.

Insurance woes? Having difficulty with insurance collections? We have over 15 years of insurance experience. Call MEDCON at 247-0591 today!

For Sale

(Like New)Complete 2 Exam Room FP med Equip. incl. Gyn setup for LEEP, cryo and colposcopy; Ritter 75 & 100 tables: PhysioMonitor (ECG/BP/SaO2/Temp/Resp); WA microtymp/audio/oto/opthal; Biojector; lomed Phoresor; Vasectomy set; misc. surgicals, etc. Will fax complete list. No reasonable offer refused. Call now (Big Island) 775-9169.

Allergist retiring.—Misc. office equipment, refrigerator, autoclave, full recept. room furnishings, desk for sale after April 23. Call 596-8123.

Office for Sale

Big Island physicians' office spaces. 13,000 sq. ft., 2 doctors leased already. Ideal location for med. center, beautiful , new redwood/cedar buildings, blending into the natural envionment. On rural hwy. less than a mile to county hosp. in Kona. Reasonable rate. Call 323-3030.

Two furnished offices, share expenses. One Medical Arts Building: Tue, Thu, Sat; call 596-0164. St. Francis West-Ewa: Mon, Wed, Fri, Sat; call 671-0188.

Established and furnished office to share at 419 Uluniu St. Kailua. Two ofcs with 2 exam rooms for FTMD or 2 PT. Two parking stalls. Call 261-7933 or 261-1414.

Two-story commercial property w/ parking. Ideal for medical practice. Kailua-Enchanted Lake. For sale or lease w/ option. Financing available. 261-4856

Practice for sale

Sports Medicine and Orthopedic Surgical Practice willing to share office space at Queen's POB-1 and Pali Momi POB location, complete staff, managerical system, radiology and physical therapy services available. Contact Diane Fong at 536-4992 M-W-F or at 487-7231 T & TH.

MD Retiring – Fam. Prac. for sale with equipment; easy terms, Queen Emma St. Call 533-1844.

Honolulu Ob/Gyn practice for sale. Wonderful opportunity for graduating resident or physician wishing to relocate to beautiful Hawaii. 30 year, well establ. active practice conveniently located in tertiary level women and children's medical center. Four board-certified associate Ob/Gyns share office expenses and on-call coverage. Computerized electronic billing and insurance systems in place. Retiring senior practitioner will assist in transfer of practice and introduce to patients. Direct inquiries to 4340 Pahoa Ave. #16D, Honolulu, HI 96816-5032 or Fax (808)732-1337.

Splash! Hawaii, Utah, Florida, Arizona, South Carolina—FamPrac, $90-140,000+benefits; Internists, Ob/Gyns, Cardios. Fee pd. CV's: LAM Associates, Dept. H, 444 Hobron Ln. #207H, Honolulu, 96815-1229.

Editorial *(Continued from Page 104)*

It is now on a front burner. The epidemiological data comparing the incidence of *H. pylori* infections and chronic active gastritis and ulcers in our multiracial population in Hawaii is very interesting.

"Hawaii offers a relatively unique opportunity for studying the incidence of disease in different ethnic groups that is not equalled in any other part of the United States...," or any place else in the world.

At a recent Interscience Conference on Antimicrobial Agents and Chemotherapy, a seminar on *H. pylori* and recurrent ulcers and gastric cancer drew much attention.

There are now serologic tests to detect *H. pylori.* David N. Taylor MD of the Walter Reed Army Institute of Research in Washington reported that as much as 60% of populations in the developing world are infected with *H. pylori* by age 20. In the United States, the rate as determined by Army recruits is closer to 26%.

Another symposium participant, Julie Parsonnet MD, reported that in nested, case–controlled studies from Europe, Asia and the United States, people with adenocarcinoma of the gastric fundus or antrum were two to six times more likely than matched controls to have serologic evidence of *H. pylori* infection.

While most people infected with *H. pylori* do not develop cancer, continued studies of *Helicobacter pylori* in Hawaii should be continued and expanded.

Norman Goldstein MD, Editor

Mahalo nui loa

Thank you very much to you, our readers and members, for your support of the new *Hawaii Medical Journal.*

Your notes, letters and phone calls have been very supportive of our new format— from our Varez cover art to our new regular columns— as well as our long–time, regular contributors, Drs Henry Yokoyama and Russell Stodd.

Last month's issue on "Organ Transplantation—25 Years In Hawaii" was a winner. Mahalo to Drs Livingston Wong and Alan Cheung, guest editors for this issue, for a superb special issue.

Norman Goldstein MD, Editor

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

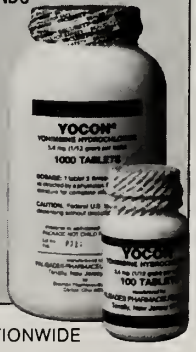
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

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In a computerized world, only the numbers matter.
In North Carolina, optometrists are claiming that a regulatory fiat allows them to bill for 152 CPT codes under Medicare. Several of these codes are for surgical procedures (laser surgery, lid surgery, fetal monitoring!?) which would be in violation of the state optometric act. Several experts note that scope of practice is ultimately a licensure, not a coding, issue. Supposedly the state Attorney General ruled that only the board of optometry could define their scope of practice, and thereby he allowed the ODs to take a giant leap over such silly things as medical education and public safety. Have we been delivered into the hands of idiots, or what?

Medicare citizens—for certain, Hillary is after your security blanket.
If you are a *mature* (age 50) physician, you too can join the American Association of Retired Persons (AARP). The December issue of the monthly AARP "Bulletin" stated that 51% of American adults favor the Clinton health plan, but 62% admitted they have little or no understanding of the plan! Additionally, the article goes on to state that 82% of those who read the "Bulletin" are against the plan! To put it more simply, those AARP members who can read and think recognize that the administration health plan will work against their interests. AARP is an extremely powerful political group, and once they marshal their forces over an issue, Washington is forced to listen. It's a fact—older folks get out and vote. Moreover, they stand to lose a lot when Medicare disappears, which will surely occur in the "reform" plan.

If you are already in a hole, do not continue digging.
In defense of Jeffrey Rutgard MD, San Diego ophthalmologist, a book has come out in paperback entitled *Blind Injustice*. The book was written by Bill Sardi, an industry consultant and distributor of post–op sunglasses. Dr Rutgard stated that he has operated on as many as 25 cataract patients in a single day (that's a lot of sunglasses!) His license was suspended over allegations that he performed needless cataract surgery, and he was featured on NBC's "Dateline." A patient claimed that the doctor operated unnecessarily and caused the loss of vision in her eye. The point of the limited edition book is to question some of the actions of the California State Medical Board and the Office of the Inspector General in their prosecution efforts. Sardi freely admits that Dr Rutgard is held in very low regard by his fellow ophthalmologists in the community, and that the book is not expected to make any money. Still, the author wants to examine the actions of the prosecutors as to whether the doctor was afforded due process, and was it proper to take his license and destroy his reputation. No doubt Dr Rutgard would have had a much better chance to preserve his medical standing if he had enjoyed the affection and respect of his colleagues.

A little inaccuracy saves a world of explanation.
Managed care sucks! The Texas Medical Association has documented 2,100 cases of rationing complaints by managed-care providers, including lawsuits against HMOs for denial of care. In one TMA case, a health network refused to pay for a child's tonsillectomy.

Another HMO denied hospitalization for a diabetic patient with gangrene. Additionally, doctors were "deselected" from the plan when they refused to ration services. Of course at this point, patients can opt out of a managed-care environment, but under the Clinton plan, that will not be true. Furthermore, Sec. 1406 mandates that a patient cannot directly pay a doctor, cannot go outside the HMO, in effect the patient has no legal way to obtain additional care after being rationed by the HMO. Is this freedom? Is this America?

The acrobatic lawyer keeps his balance by saying the opposite of what he does.
While the Clinton spokespersons orate and pontificate about the abuse, expense, fraud, and imperfections in American health care, Congress should consider the actions of Independent Counsel Lawrence Walsh. He spent seven years, and $37 million on a fruitless Iran-Contra investigation. The final report was 566 pages long, or $65,371 per page, that is $2,615 per word. So, when Congress looks at the meter running wild, one could only wish that some concern would be given to the taxpayers $$$ which Washington lawyers flush away, with virtually no social benefit, except of course, their own wallets.

The public will believe anything, so long as it is not founded on truth.
To no one's surprise, Hawaii optometrists have offered a bill in the state legislature for therapeutic drug prescription and thereby management of eye disease. The medical pretenders—optometrists, nurse practitioners, psychologists, chiropractors, et al.—all are seeking recognition by statute so that they can dip into the Medicare, Medicaid and insurance company cash boxes. Never mind about skills, knowledge, training, or intelligence—and what about public safety? The sad truth is that legislatures respond to pressure groups and, of course, money, with the result that egregious measures have been passed in some states. Supposedly the pretenders will provide safe, useful medical care with cost saving. However, it is well known that more providers mean more expense, not less.

If a politician found cannibals among his constituents, he would promise them missionaries for dinner.
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Addenda
▲ Many health care policy–makers on Capitol Hill still believe that cataract surgery is a laser procedure.

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HAWAII MEDICAL JOURNAL

May 1994 Volume 53, No. 5 ISSN: 0017-8594



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1856

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The author has requested that readers note these changes to **Special to the Graduating Class of 1993, et al.** November 1993, pages 288-289, Anita L. Gerhard MD

Page 288 paragraph 4
Reps, Paul. *Zen Flesh, Zen Bones*. Charles E. Tuttle Co. Inc.

Page 289 paragraph 2
Langer EJ. *Mindfulness*. Addison-Wesley Publishing Co; 1989.

Page 289 paragraph 5
Hilfiker D. Their wounds and ours. *Minn Med.* 1990; 7:73:(7):13-15.

Editorial Norman Goldstein MD

This issue of the *Journal* contains two papers uniquely Hawaiian.

One of the primary missions of our *Journal* has been to promote *local* medical research and education by publishing manuscripts emphasizing medicine in Hawaii. The editors realize our *Journal* has far-reaching readership—on the Mainland as well as other countries.

If a Mainland or foreign reader needs further information or interpretation, he or she can contact the author or the *Journal.*

The manuscript by Ako, Ota and Ogasamara was originally submitted to the *Journal* two years ago, but was postponed until now and updated. Dr Harry Ako of the Department of Agricultural Biochemistry at the University of Hawaii and his associates, The Queen's Hospital Department of Food and Nutritional Services, studied the Omega-3 fatty acid levels in commercially available fish oil capsules as well as local seafood. The data obtained by this group will be of interest to everyone in Hawaii and elsewhere.

Another dietary paper by Shintani and associates reports on the Waianae Coast Diet Program. We had planned to include this manuscript in a future special issue of the *Journal* dealing with Hawaiian medicine, but it complements the Ako, et al. paper so well, it will appear at this time.

We now have a very comfortable backlog of good manuscripts for publication. As reported by Commissioner Myron Shirasu at the HMA Council meeting April 8, 1994, the *Journal* is alive and doing very well—thank you.

Thanks to our Editorial Board and Peer Review Panel, the *Journal* staff and Pacific Printers, we will attempt to accept and publish manuscripts faster. With the continued support of our advertisers, and new advertisers, we plan to increase the number of articles per issue.

Norman Goldstein MD, Editor

➤ *Continued on Page 132*



Cover art and descriptive text by
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Birth of Palila

The boy Palila was born to Hina's daughter Mahinui. Palila was not an ordinary birth, he was born as a short piece of sennit cord. The puzzled parents tossed the curious cord onto their rubbish heap and left it there.

When Hina, the grandmother, came by to ask about her grandson, Mahinui told her about the piece of cord. Hina went straight to the rubbish heap and searched until she found the length of cord. She hurried home with the cord and wrapped it in some clean white *kapa*. Hina wrapped this bundle three more times until it miraculously took the shape of a boy child. She named him Palila.

As grandmothers did in those days Palila was given careful attention. Hina built a special shelf for the child and fitted it with *uluhe* fern. Palila was fed nothing but bananas until he matured.

Under Hina's care and instruction Palila grew up to be a legendary adventurer and king of Hilo.

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Medical School Hotline

Henry A. Foley PhD
Professor of Community Medicine
Department of Community Medicine and Family Practice

Providing Health Care to All Communities

In the Islands, as in many areas throughout the U.S., there exists pockets of health care poverty where no physicians or nurses are in residence, and where the presence of public health and social workers would be considered a real community luxury.

And yet Hawaii has nearly 2,500* medical practitioners, roughly one physician for every 464**persons, so why do these shortages of doctors exist?

There are several reasons: First, the majority of Hawaii's physicians practice in Honolulu where there are technologically advanced hospitals. Most received their specialty training in tertiary care hospitals, and this is where most of them still work. Then too, rural areas seldom offer full-service hospitals or a patient base large enough to support a specialty practice. The fact is that there are too few primary care physicians available to practice in community settings in Hawaii as well as nationally. This shortage can be illustrated by some startling statistics: In 1991, less than 15% of all prospective doctors chose primary care as an educational focus, down from 1976 when 31% of medical students selected it as a career choice. The Council of Graduate Medical Education (COGME) recently concluded that such a decrease could not come at a more inopportune time as the health care industry evolves more in the direction of managed care organizations requiring more primary care physicians.

Although the John A. Burns School of Medicine has a better record of producing primary care physicians than the national average, it realized that it could do better in 1989 when the W. K. Kellogg Foundation offered it the opportunity to create a statewide regional academic consortium.

The W.K. Kellogg Foundation, recognizing that the shortage of care-givers dedicated to providing basic primary care was tied to the way health care professionals are trained, initiated a program of Community Partnerships for Health Professions Education. Through this program, the Foundation funded seven projects — in Atlanta, Boston, East Tennessee, El Paso, Michigan, West Virginia and Hawaii—to put students from schools of medicine, nursing, public health and social work into community clinics to train outside the walls of the traditional classroom with the approval and cooperation of the community. In this way, it is hoped that health professions graduates, having trained in the community, will remain in community settings to practice.

Ke Ola O Hawai'i (The Health of Hawaii) represents the Kellogg partnership in Hawaii. It consists of seven initial partner institutions: The University of Hawaii Schools of Medicine, Nursing, Public Health and Social Work and three community health centers: Kalihi-Palama Health Center, Queen Emma Clinics, and Waianae Coast Comprehensive Health Center.

The medical and nursing students who select the *Ke Ola* program experience their problem-based and inquiry-based learning within the framework of clinic and community settings. By working in multiprofessional teams, students understand the duties and concerns of their fellow health care professionals, thus promoting an integrated approach to health care. The teams carry out community projects as part of their year's work. Some recent projects include: Counseling pregnant teens at Nanakuli High School, the development of a drug education program for Makaha Elementary School, and defining health needs for the Kewalo Homestead community and for Kalihi elementary school children.

Dr Ricardo Custodio, medical director of Kalihi-Palama Health Center, has high praise for the Kellogg community partnerships program. "It's a great idea to train health care students in the community. This program not only reinforces the decision that those with a community bent have made, but it gets those who are 'on the fence' about their career choices."

Ke Ola O Hawai'i is becoming a strategic contributor to the production of more primary care physicians, knowledgeable and responsive to our local communities and advocating the needs of local consumers faced with the corporatization of health care delivery.

*2,491 in 1991 count
**Based on a resident population of 1,159,600 (July 1, 1991)

Historical Notes

John A. Breinich
Hawaii Medical Library

The first Chinese physicians to practice western medicine in Hawaii arrived on July 4, 1896. Dr Khai Fai Li and his wife Dr Tai Heong Kong met at the Canton Medical College, and on June 3, 1896 graduated, married, and set sail for Hawaii. Ten days after their arrival, they passed their medical board examinations and began a practice that lasted the next 50 years.

Dr Li was the first to discover bubonic plague among the Chinese in 1899, and in 1911 identified the first case of cholera in the Islands. He was very active in the fight against the use of opium, and helped establish a Chinese newspaper and language school.

Dr Kong practiced under her own name (very unusual in those days). In her 55 years of practice, she delivered more than 6,000 babies and in 1946 was declared the physician with the highest record of deliveries of any private practitioner by Ripley's "Believe It or Not." She also found time to have 9 children of her own and be very active in community activities. In 1948, Ripley featured them again as the longest practicing medical couple in the world. Dr Kong died in 1951 at the age of 76 and Dr Li died in 1954 at the age of 78 leaving a tradition of healing and caring that was carried on by five great grandchildren who became physicians.

HMA President's Message

Andrew Don MD

April 26, 1994

QUEST Update

Hawaii Medical Association leadership met with Governor John Waihee on April 25 to present the concerns of HMA regarding the implementation of QUEST, the 5-year managed care demonstration project to privatize portions of the current Medicaid program. HMA's concerns centered on the time line for physicians to make an informed decision regarding participation in QUEST and the concurrent dissemination of information to Medicaid enrollees requesting their choice of health care plan without the benefit of any physician roster or other information regarding each plan.

HMA explained to the Governor that physicians received information and a contract from one of the five health care plans awarded QUEST contracts on April 8. The other health care plans have contacted physicians and asked them to sign letters of intent without any contracts. While the contract physicians received made reference to a provider manual and fee schedule, none was enclosed. With such scant information, physicians were asked to make a determination by April 25 regarding their participation in QUEST.

Concerns were raised regarding continuity of care and how patients would be linked to their present physicians by July 1, the proposed startup date. HMA cautioned that unless patients, physicians, hospitals, and health care plans *all* have the same information and guidelines, the resulting chaos can have devastating consequences. HMA noted there are many unanswered questions and a lack of assurance that the QUEST system is ready to function.

HMA requested that the Governor delay the implementation of QUEST until such time as the program can assure that all patients, physicians, and other providers have knowledge of the system. How to access care, how quality will be monitored, a roster of physicians in each plan and other educational materials.

HMA also requested that the Governor immediately appoint a QUEST task force to oversee the development and planning of QUEST and address quality of care issues. At the conclusion of the meeting, the Governor was receptive regarding the concerns expressed.

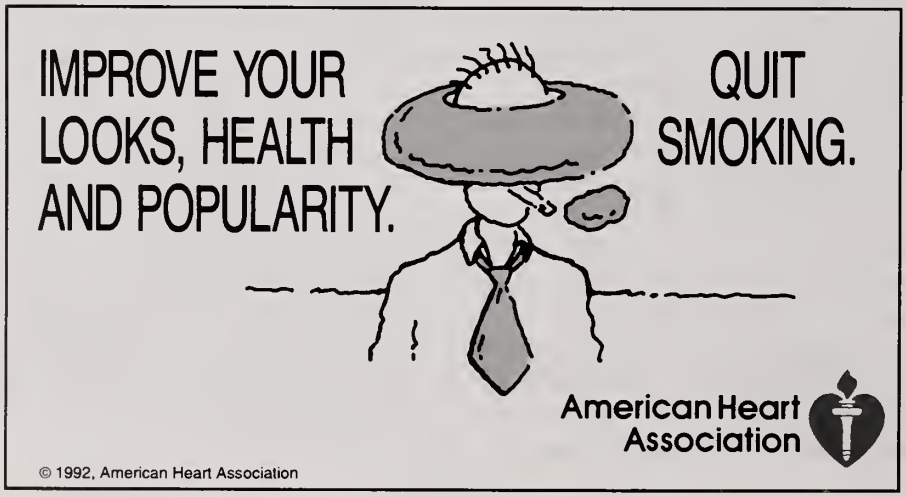
Later that day, at the invitation of Senator Andrew Levin from Hilo, physicians were invited to the Mabel Smyth Auditorium to hear from the QUEST program, Department of Health, 5 QUEST health care plans, and physicians in the community. Nearly 400 physicians listened as Mrs Winona Rubin, Director of the State Department of Human Services, relayed the Governor's communications to the DHS to delay QUEST until August 1 and that a QUEST task force would be appointed.

At the meeting, HMA was able to reiterate concerns regarding QUEST. We noted that although the concept of privatizing medical care to the indigents may be a good one, physicians believe that in order to be successful the QUEST program must have community support, especially from physicians. We noted that last September HMA expressed concerns about the rapid pace of QUEST implementation without dialogue or input from the community, especially physicians. The offer of HMA assistance to DHS to participate in the development of QUEST was ignored. Questions have gone largely unanswered. HMA believes that *Voice* + *Choice* + *Coverage* = Community base of support from the physicians. Physicians must have a *voice* in the development and implementation, patients and physicians must have *choice* of how they can participate and with adequate *coverage* for physicians as well as patients.

The American Academy of Pediatrics, Hawaii Chapter, represented by Dr Richard Mitsunaga, also objected to the QUEST timetable. He also noted that QUEST "...goes counter to the Medical Home model which is a principle of Pediatric thinking. A key item of the Medical Home is the provision of care over an extended period of time to enhance continuity." Dr. Mitsunaga noted that pediatricians want emphasis on continuity, prevention and early intervention rather than crisis-oriented or episodic care. He noted that more than half of QUEST enrollees will be children and stressed the need for pediatric input.

All of the 5 health care plans awarded QUEST contracts were present. AlohaCare, HMSA, and Queen's Hawaii Care will utilize community physicians while Kaiser and Straub will utilize physicians already in their system. Information regarding contracts, future phases of the program, and other questions were addressed over the 4-hour meeting. The plans are expected to review their timetables and contracts in light of the delay

➤ *Continued on Page 148*



HMA Council Highlights

The HMA Council meeting on March 4, 1994 was called to order by President Andrew Don. Members present were: Drs A. Don, F. Holschuh, J. Chang, C. Lehman, J. Spangler, R. Stodd, C. Kam, A. Kunimoto, L. Howard, B. Shitamoto, R. Goodale, T. Smith, D. Canete, P. Chinn, W. Dang Jr, M. Shirasu, J. Betwee, H. Percy, P. Kim, C. Kadooka, J. Lumeng, J. McDonnell, S. Wallach, Medical Student delegate A. Matteo, Resident Physician delegate M. Montoya, Young Physician delegate M. Lau, HMA Alliance representatives A. Nip and K. Yuen. Guest: Dr J. Lewin, Dept. of Health. Staff: J. Won, B. Kendro, N. Jones, L. Tong, P. Kawamoto, J. Estioko, and recording secretary A. Rogness.

Dr Don discussed the basis for the HMA and the Federation placing an ad in the local paper regarding the QUEST, Optometry and Nurse Prescriptive Authority bills. The HMA Executive Committee and the Federation agreed on these bills and the officers of the two organizations agreed to place the ad jointly. The Council assured Dr Don that they trust his judgment and will support him in decisions that need to be made quickly.

Mrs A. Nip and K. Yuen of the HMA Alliance reported the following: (1) The fund-raising event "The Greatest Show in Hawaii" will be presented on March 13. (2) The Alliance will be active in distributing first-aid kits to the Legislature on Doctors' Day, March 30.

As Chair of the Environmental Health Committee, Dr Lehman reported that SB 2729 proposes to develop a Dept of Environmental Protection. Council voted to support the committee's recommendation that HMA write testimony supporting the development of the Dept of Environmental Protection in concept and oppose several issues that were irrelevant to the bill.

Resolution 2 on regulation of toxic pest control chemicals presented at the 1993 HMA annual meeting was referred back to the Environmental Committee to be studied further with recommendations to be submitted to Council. The Environmental Committee recommended that Resolution 2 as amended be adopted and Council voted to accept the committee's recommendations.

Jon Won recommended that HMA submit a grant on a Physicians Initiative Project to the Robert Wood Johnson Foundation. The goal of the project is to increase the number of private practicing physicians in the community to care for underserved populations. Council voted to support the project and approved the grant.

The John A. Burns School of Medicine is applying for a grant to establish a statewide system of area health education centers to improve health services for the underserved population in the state of Hawaii. The Council did not have enough information regarding the grant and therefore recommended that the HMA Executive Committee obtain the grant, review it and make a decision.

Dr Don thanked Drs Jeanette Chang, Patricia Chinn, Philip Hellreich and Theresa Smith for their work and long hours spent at the legislature. Dr Wallach, Legislative Chair updated Council on the position of the various bills that are of importance to HMA. There was further discussion on the Nurse Prescriptive Authority bill. Council voted to oppose the current drafts of the bills regarding nurse prescriptive authority. Discussion followed regarding physician supervision and the need for any nurse prescriptive agreement to be regulated through the Board of Medical Examiners.

According to Dr Betwee there is a need for a support system for physicians and their families who are being sued for malpractice. Dr Betwee will speak with David Karp of MIEC in March to determine if MIEC is interested in participating in such a program. An ad hoc committee will be formed and chaired by Dr Betwee.

Council approved the nomination of Dr John H.C. Kim, Director of Leahi Hospital to represent the Department of Health on the HMA Cancer Commission.

The component societies reported:

Honolulu.—President-elect Dan Canete reported that the Honolulu County Medical Society is: (1) Encouraging and working toward increasing the number of hours spent on health education public schools from 45 hours to 100 hours a year. (2) Developing a health care summit meeting to be held in January 1995. (3) Working with a computer network system capable of providing an automated report delivery system. (4) Scheduling an HCMS/HMSA Committee meeting in the near future to set rules and establish goals for the committee.

Hawaii.—Dr Craig Kadooka of Hawaii County Medical Society reported that: (1) A meeting was held in February sponsored by Medtronics with cardiologists discussing malig-

➤ *Continued on Page 149*


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➤ *(Continued from Page 128)*

Letters from the legislators

Dear Dr. Goldstein:

Thank you for your thoughtful and kind editorial, your *Letter to the Legislators.*

I want to share with you the attached letter and an article from the *Cortlandt Forum* [March 1994].

My perspective of the Hawaii health care system may be somewhat different from others, but the key is that it works and has been working for 20 years.

Aloha,
Sam Lee
38th District Representative

Honorable Joseph Souki, Speaker, House of Representatives
Honolulu, Hawaii

Dear Speaker Souki:

The current national debate on healthcare reform shows how farsighted elected officials in Hawaii were when they enacted our employer-based health care system in 1974.

Hawaii is thus a generation ahead of the rest of the nation. But that lead rests on a fragile basis, a narrow exemption from ERISA.

Our state interest in the current national debate is to ensure that our unique system remains intact and viable so that we can continue to improve on achieving universal access and to include care from Healthy Start to Project Hope.

I have sought to explain and define our system, not as a model for the rest of the nation, but as a natural progression of our unique society's history and values. We should be neither the envy nor an irrelevance for our sister states. A quiet exposition, I hope, will elicit understanding and a willingness by others to explore and experiment, as is happening in Washington and Oregon. Enclosed is an article I wrote for the *Cortlandt Forum*, a national periodical for primary care doctors with a circulation of 175,000. The editor had seen my letter in the *New England Journal of Medicine* and telephoned me to ask for an article. I was happy to oblige.

Aloha,
Sam Lee
38th District Representative

Health Care, Hawaiian Style

Since 1974, the people of Hawaii have enjoyed health insurance coverage and universal access to health care. Can Hawaii be a model for the nation, or is Hawaii unique and irrelevant?

Hawaii is unique: It has been a kingdom, a republic, a territory, an now, a state. Its people are exceedingly diverse, with no group in the majority.

The current health system dates from the Prepaid Health Care Act of 1974 (PHCA), which mandated employer health insurance for employees. It was strongly opposed by Standard Oil of California, which helped push through the federal Employee Retirement Income and Security Act (ERISA), prohibiting state regulation of self-insured employers. Standard Oil then took the state of Hawaii all the way to the U.S. Supreme Court, which struck down the Hawaii health act.

Fortunately for Hawaii, it had become a state, and its congressional delegation obtained an exemption from ERISA for the PHCA in 1982.

Interestingly, during the years 1974 to 1982, when the Hawaii health-care system was in jeopardy, Hawaiian companies continued to insure their employees. And the health insurance became dominated by two major players—the fee-for-service Hawaii Medical Services Association (HMSA) and the Kaiser HMO. By that time, about 95% of the people were covered by health insurance.

Although the 5% not covered had access to care at community health centers, the state closed the gap by enacting the State Health Insurance Program (SHIP), in which the state bought health insurance from HMSA and Kaiser, the coverage emphasizing preventive and primary care.

In 1993, the state obtained another federal waiver for managed care for Medicare and Medicaid which would be added to the gap group.

Additionally, the state legislature has been active in establishing a family practice residency program and has given the nursing school high priority. The medical school is pioneering problem-based learning by family doctors and is organizing community health centers to bid for managed care of Medicaid, Medicare, and SHIP groups. HMSA has gone into HMO operations and offers free screening, using technicians supervised by a nurse practitioner.

The remaining task is to add long-term care. Again the issue is financing, but the current debate should conclude with a definite program before the end of the decade.

Hawaii's health system has strong roots in its history. The monarchy founded the largest hospital (The Queen's Medical Center) and Kapiolani Medical Center for Women and Children. The white planters hired doctors and built small hospitals to keep workers healthy and productive. Such employer-provided health benefits were written into collective bargaining agreements with the rise of unionism and health insurance. The missionaries established settlement houses, which became the current community health centers.

The advantages of Hawaii's system are obvious. For one, it is short and simple: PHCA is 13 pages long and SHIP only three pages in the Hawaii Revised Statutes. Compare this to the Clinton Plan, which is over 1300 pages long. Second, there is no direct government role, and thus no bureaucracy, while providing universal access and coverage, with a strong private role by HMSA and Kaiser. The plan's reliance on community rating eliminates the practice of cherry picking.

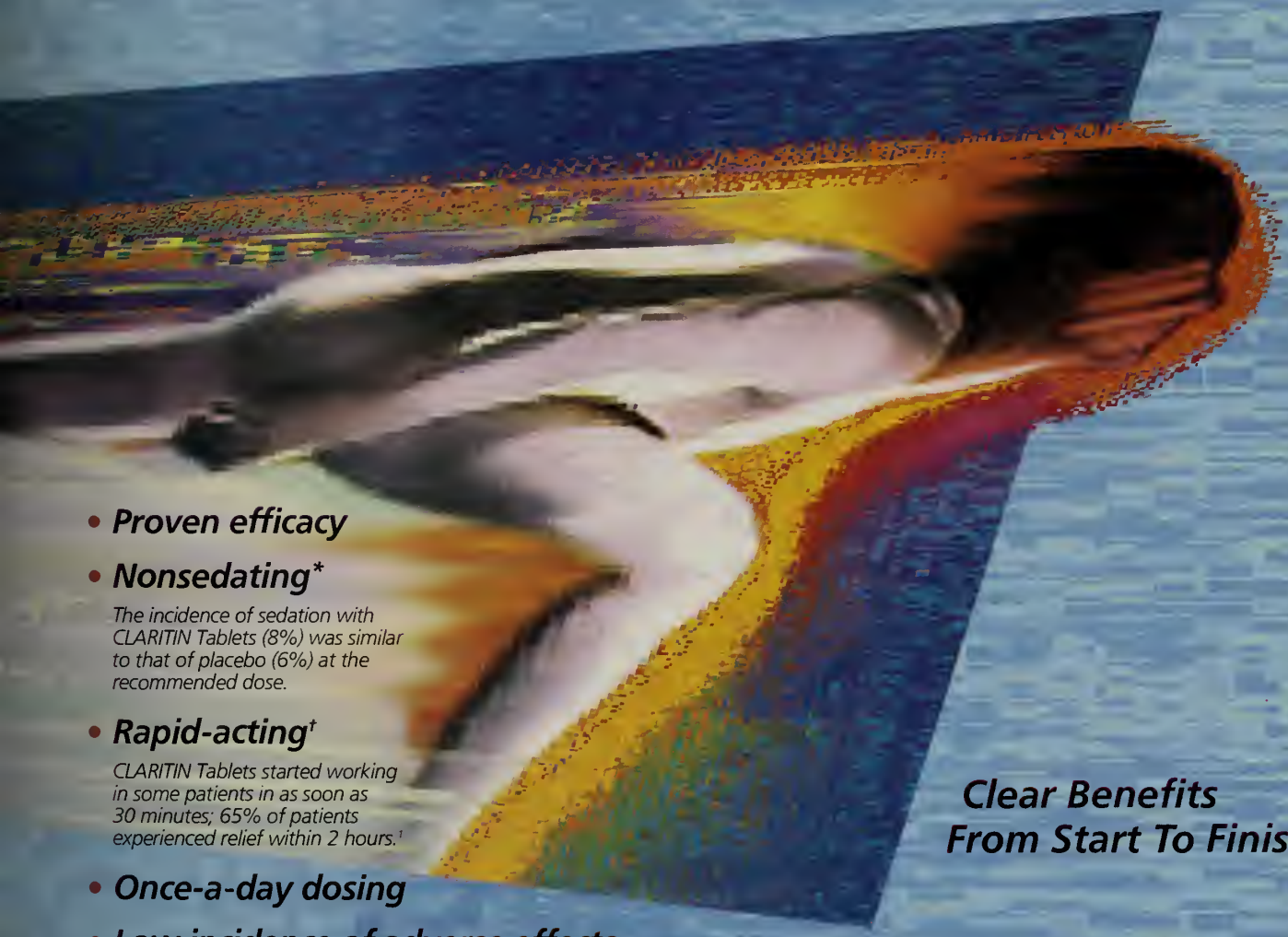
The cost of the plan is low—9% of GDP versus 10% in Canada and 14% in the United States. We have the same number of hospital employees (4.8) per patient as nationally, but only 2.9 hospital beds per 1000 versus 4.9 nationally. Our utilization is only 84 per 1000 versus 136 nationally. And still, Hawaii ranks among the healthiest states in the nation, with the best health outcomes through preventive and primary care. ■

Editorial note: Representative Sam Lee is a retired foreign service officer and has been a member of the Hawaii State Legislature since 1986. Additional letters from the legislators will appear in future issues of the Journal.

Norman Goldstein MD, Editor

FOR THE NASAL AND NON-NASAL SYMPTOMS OF SEASONAL ALLERGIC RHINITIS

A Clear Choice In Antihistamine Therapy



- **Proven efficacy**
- **Nonsedating***

 The incidence of sedation with CLARITIN Tablets (8%) was similar to that of placebo (6%) at the recommended dose.
- **Rapid-acting†**

 CLARITIN Tablets started working in some patients in as soon as 30 minutes; 65% of patients experienced relief within 2 hours.†
- **Once-a-day dosing**
- **Low incidence of adverse effects**

 In controlled clinical trials using the recommended dose, the incidence of headache (12%), somnolence (8%), fatigue (4%), and dry mouth (3%) with CLARITIN Tablets was similar to that of placebo (11%, 6%, 3%, and 2%, respectively).
- **Over 1 billion patient days of worldwide experience**

Clear Benefits From Start To Finish

Once-a-day

Claritin®

10 mg TABLETS (loratadine)

* *In studies with CLARITIN Tablets at doses 2 to 4 times higher than the recommended dose of 10 mg, a dose-related increase in the incidence of somnolence was observed.*

† *Relief began in 13% of treated patients vs 4% of placebo-treated patients within 30 minutes (P=.04). At 2 hours, 48% of patients receiving placebo experienced relief. Distribution of onset times was significantly earlier for CLARITIN Tablets vs placebo (P=.03).*

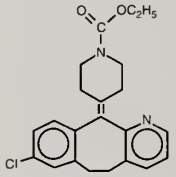
Please see following page for brief summary of Prescribing Information.

CLARITIN®
brand of loratadine
TABLETS
Long-Acting Antihistamine

PRODUCT INFORMATION

DESCRIPTION CLARITIN Tablets contain 10 mg micronized loratadine, an antihistamine, to be administered orally. They also contain the following inactive ingredients: corn starch, lactose, and magnesium stearate.

Loratadine is a white to off-white powder not soluble in water, but very soluble in acetone, alcohol, and chloroform. It has a molecular weight of 382.89, and empirical formula of $C_{22}H_{23}ClN_2O_2$; its chemical name is ethyl 4-(8-chloro-5,6-dihydro-11*H*-benzo[5,6]cyclohepta[1,2-*b*]pyridin-11-ylidene)-1-piperidinecarboxylate and has the following structural formula:



CLINICAL PHARMACOLOGY Loratadine is a long-acting tricyclic antihistamine with selective peripheral histamine H_1-receptor antagonistic activity.

Human histamine skin wheal studies following single and repeated 10 mg oral doses of CLARITIN Tablets have shown that the drug exhibits an antihistaminic effect beginning within 1 to 3 hours, reaching a maximum at 8 to 12 hours and lasting in excess of 24 hours. There was no evidence of tolerance to this effect after 28 days of dosing with CLARITIN Tablets.

Pharmacokinetic studies following single and multiple oral doses of loratadine in 115 volunteers showed that loratadine is rapidly absorbed and extensively metabolized to an active metabolite (descarboethoxyloratadine). The specific enzyme systems responsible for metabolism have not been identified. Approximately 80% of the total dose administered can be found equally distributed between urine and feces in the form of metabolic products after 10 days. The mean elimination half-lives found in studies in normal adult subjects (n = 54) were 8.4 hours (range = 3 to 20 hours) for loratadine and 28 hours (range = 8.8 to 92 hours) for the major active metabolite (descarboethoxyloratadine). In nearly all patients, exposure (AUC) to the metabolite is greater than exposure to parent loratadine.

In a study involving twelve healthy geriatric subjects (66 to 78 years old), the AUC and peak plasma levels (Cmax) of both loratadine and descarboethoxyloratadine were significantly higher (approximately 50% increased) than in studies of younger subjects. The mean elimination half-lives for the elderly subjects were 18.2 hours (range = 6.7 to 37 hours) for loratadine and 17.5 hours (range = 11 to 38 hours) for the active metabolite.

Loratadine, dosed once daily, had reached steady-state by the fifth daily dose. The pharmacokinetics of loratadine and descarboethoxyloratadine are dose independent over the dose range of 10 to 40 mg and are not significantly altered by the duration of treatment.

In the clinical efficacy studies, CLARITIN Tablets were administered before meals. In a single-dose study, food increased the AUC of loratadine by approximately 40% and of descarboethoxyloratadine by approximately 15%. The time to peak plasma concentration (Tmax) of loratadine and descarboethoxyloratadine was delayed by 1 hour with a meal. Although these differences would not be expected to be clinically important, CLARITIN Tablets should be administered on an empty stomach.

In patients with chronic renal impairment (Creatinine Clearance ≤ 30 mL/min) both the AUC and peak plasma levels (Cmax) increased on average by approximately 73% for loratadine; and approximately by 120% for descarboethoxyloratadine, compared to individuals with normal renal function. The mean elimination half-lives of loratadine (7.6 hours) and descarboethoxyloratadine (23.9 hours) were not significantly different from that observed in normal subjects. Hemodialysis does not have an effect on the pharmacokinetics of loratadine or its active metabolite (descarboethoxyloratadine) in subjects with chronic renal impairment.

In patients with chronic alcoholic liver disease the AUC and peak plasma levels (Cmax) of loratadine were double while the pharmacokinetic profile of the active metabolite (descarboethoxyloratadine) was not significantly changed from that in normals. The elimination half-lives for loratadine and descarboethoxyloratadine were 24 hours and 37 hours, respectively, and increased with increasing severity of liver disease.

There was considerable variability in the pharmacokinetic data in all studies of CLARITIN Tablets, probably due to the extensive first-pass metabolism. Individual histograms of area under the curve, clearance, and volume of distribution showed a log normal distribution with a 25-fold range in distribution in healthy subjects.

Loratadine is about 97% bound to plasma proteins at the expected concentrations (2.5 to 100 ng/mL) after a therapeutic dose. Loratadine does not affect the plasma protein binding of warfarin and digoxin. The metabolite descarboethoxyloratadine is 73% to 77% bound to plasma proteins (at 0.5 to 100 ng/mL).

Whole body autoradiographic studies in rats and monkeys, radiolabeled tissue distribution studies in mice and rats, and *in vivo* radioligand studies in mice have shown that neither loratadine nor its metabolites readily cross the blood-brain barrier. Radioligand binding studies with guinea pig pulmonary and brain H_1-receptors indicate that there was preferential binding to peripheral versus central nervous system H_1-receptors.

Clinical trials of CLARITIN Tablets involved over 10,700 patients who received either CLARITIN Tablets or another antihistamine and/or placebo in double-blind randomized controlled studies. In placebo-controlled trials, 10 mg once daily of CLARITIN Tablets was superior to placebo and similar to clemastine (1 mg BID) or terfenadine (60 mg BID) in effects on nasal and non-nasal symptoms of allergic rhinitis. In these studies, somnolence occurred less frequently with CLARITIN Tablets than with clemastine and at about the same frequency as terfenadine or placebo. In studies with CLARITIN Tablets at doses 2 to 4 times higher than the recommended dose of 10 mg, a dose-related increase in the incidence of somnolence was observed. Therefore, some patients, particularly those with hepatic or renal impairment and the elderly, may experience somnolence.

In a study in which CLARITIN Tablets were administered at 4 times the clinical dose for 90 days, no clinically significant increase in the QTc was seen on ECGs.

INDICATIONS AND USAGE CLARITIN Tablets are indicated for the relief of nasal and non-nasal symptoms of seasonal allergic rhinitis.

CONTRAINDICATIONS CLARITIN Tablets are contraindicated in patients who are hypersensitive to this medication or to any of its ingredients.

PRECAUTIONS **General:** Patients with liver impairment should be given a lower initial dose (10 mg every other day) because they have reduced clearance of CLARITIN Tablets.

Drug Interactions: The coadministration of a single 20 mg dose of CLARITIN Tablets (double the recommended daily dose) and a 200 mg dose of ketoconazole twice daily to 12 subjects resulted in increased plasma concentrations of loratadine (180% increase in AUC) and its active metabolite, descarboethoxyloratadine (56% increase in AUC). However, no related changes were noted in the QTc on ECGs taken at 2, 6, and 24 hours after the coadministration of loratadine and ketoconazole. Also, there were no significant differences in clinical adverse events between CLARITIN Tablet groups with or without ketoconazole.

Other drugs known to inhibit hepatic metabolism should be coadministered with caution until definitive interaction studies can be completed. The number of subjects who concomitantly received macrolide antibiotics, cimetidine, ranitidine, or theophylline along with CLARITIN Tablets in controlled clinical trials is too small to rule out possible drug-drug interactions. There does not appear to be an increase in adverse events in subjects who received oral contraceptives and CLARITIN Tablets compared to placebo.

Carcinogenesis, Mutagenesis, and Impairment of Fertility: In an 18-month oncogenicity study in mice and a 2-year study in rats, loratadine was administered in the diet at doses up to 40 mg/kg (mice) and 25 mg/kg (rats). In the carcinogenicity studies, pharmacokinetic assessments were carried out to determine animal exposure to the drug. AUC data demonstrated that the exposure of mice given 40 mg/kg of loratadine was 3.6 (loratadine) and 18 (active metabolite) times higher than a human given 10 mg/day. Exposure of rats given 25 mg/kg of loratadine was 28 (loratadine) and 67 (active metabolite) times higher than a human given 10 mg/day. Male mice given 40 mg/kg had a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) than concurrent controls. In rats, a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) was observed in males given 10 mg/kg and males and females given 25 mg/kg. The clinical significance of these findings during long-term use of CLARITIN Tablets is not known.

In mutagenicity studies, there was no evidence of mutagenic potential in reverse (AMES) or forward point mutation (CHD-HGPRT) assays, or in the assay for DNA damage (Rat Primary Hepatocyte Unscheduled DNA Assay) or in two assays for chromosomal aberrations (Human Peripheral Blood Lymphocyte Clastogenesis Assay and the Mouse Bone Marrow Erythrocyte Micronucleus Assay). In the Mouse Lymphoma Assay, a positive finding occurred in the nonactivated but not the activated phase of the study.

Loratadine administration produced hepatic microsomal enzyme induction in the mouse at 40 mg/kg and rat at 25 mg/kg, but not at lower doses.

Decreased fertility in male rats, shown by lower female conception rates, occurred at approximately 64 mg/kg and was reversible with cessation of dosing. Loratadine had no effect on male or female fertility or reproduction in the rat at doses of approximately 24 mg/kg.

Pregnancy Category B: There was no evidence of animal teratogenicity in studies performed in rats and rabbits. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, CLARITIN Tablets should be used during pregnancy only if clearly needed.

Nursing Mothers: Loratadine and its metabolite, descarboethoxyloratadine, pass easily into breast milk and achieve concentrations that are equivalent to plasma levels with an AUC_{milk}/AUC_{plasma} ratio of 1.17 and 0.85 for the parent and active metabolite, respectively. Following a single oral dose of 40 mg, a small amount of loratadine and metabolite was excreted into the breast milk (approximately 0.03% of 40 mg over 48 hours). A decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. Caution should be exercised when CLARITIN Tablets are administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children below the age of 12 years have not been established.

ADVERSE REACTIONS Approximately 90,000 patients received CLARITIN Tablets 10 mg once daily in controlled and uncontrolled studies. Placebo-controlled clinical trials at the recommended dose of 10 mg once a day varied from 2 weeks' to 6 months' duration. The rate of premature withdrawal from these trials was approximately 2% in both the treated and placebo groups.

REPORTED ADVERSE EVENTS WITH AN INCIDENCE OF MORE THAN 2% IN PLACEBO-CONTROLLED ALLERGIC RHINITIS CLINICAL TRIALS

PERCENT OF PATIENTS REPORTING

	LORATADINE 10 mg QD n = 1926	PLACEBO n = 2545	CLEMASTINE 1 mg BID n = 536	TERFENADINE 60 mg BID n = 684
Headache	12	11	8	8
Somnolence	8	6	22	9
Fatigue	4	3	10	2
Dry Mouth	3	2	4	3

Adverse event rates did not appear to differ significantly based on age, sex, or race, although the number of non-white subjects was relatively small.

In addition to those adverse events reported above, the following adverse events have been reported in 2% or fewer patients.

Autonomic Nervous System Altered salivation, increased sweating, altered lacrimation, hypoesthesia, impotence, thirst, flushing.

Body As A Whole Conjunctivitis, blurred vision, earache, eye pain, tinnitus, asthenia, weight gain, back pain, leg cramps, malaise, chest pain, rigors, fever, aggravated allergy, upper respiratory infection, angioneurotic edema.

Cardiovascular System Hypotension, hypertension, palpitations, syncope, tachycardia.

Central and Peripheral Nervous System Hyperkinesia, blepharospasm, paresthesia, dizziness, migraine, tremor, vertigo, dysphonia.

Gastrointestinal System Abdominal distress, nausea, vomiting, flatulence, gastritis, constipation, diarrhea, altered taste, increased appetite, anorexia, dyspepsia, stomatitis, toothache.

Musculoskeletal System Arthralgia, myalgia.

Psychiatric Anxiety, depression, agitation, insomnia, paroniria, amnesia, impaired concentration, confusion, decreased libido, nervousness.

Reproductive System Breast pain, menorrhagia, dysmenorrhea, vaginitis.

Respiratory System Nasal dryness, epistaxis, pharyngitis, dyspnea, nasal congestion, coughing, rhinitis, hemoptysis, sinusitis, sneezing, bronchospasm, bronchitis, laryngitis.

Skin and Appendages Dermatitis, dry hair, dry skin, urticaria, rash, pruritus, photosensitivity reaction, purpura.

Urinary System Urinary discoloration, altered micturition.

In addition, the following spontaneous adverse events have been reported rarely during the marketing of loratadine: peripheral edema; abnormal hepatic function, including jaundice, hepatitis, and hepatic necrosis; alopecia; seizures; breast enlargement; erythema multiforme; and anaphylaxis.

DRUG ABUSE AND DEPENDENCE There is no information to indicate that abuse or dependency occurs with CLARITIN Tablets.

OVERDOSAGE Somnolence, tachycardia, and headache have been reported with overdoses greater than 10 mg (40 to 180 mg). In the event of overdosage, general symptomatic and supportive measures should be instituted promptly and maintained for as long as necessary.

Treatment of overdosage would reasonably consist of emesis (ipecac syrup), except in patients with impaired consciousness, followed by the administration of activated charcoal to absorb any remaining drug. If vomiting is unsuccessful, or contraindicated, gastric lavage should be performed with normal saline. Saline cathartics may also be of value for rapid dilution of bowel contents. Loratadine is not eliminated by hemodialysis. It is not known if loratadine is eliminated by peritoneal dialysis.

Oral LD_{50} values for loratadine were greater than 5000 mg/kg in rats and mice. Doses as high as 10 times the recommended clinical doses showed no effects in rats, mice, and monkeys.

DOSAGE AND ADMINISTRATION Adults and children 12 years of age and over: One 10 mg tablet daily on an empty stomach.

In patients with liver failure, 10 mg every other day should be the starting dose.

HOW SUPPLIED CLARITIN Tablets, 10 mg, white to off-white compressed tablets; impressed with the product identification number "458" on one side; and "CLARITIN 10" on the other; high density polyethylene plastic bottles of 100 (NDC 0085-0458-03). Also available, CLARITIN Unit-of-Use packages of 14 tablets (7 tablets per blister card) (NDC 0085-0458-01) and 30 tablets (10 tablets per blister card) (NDC 0085-0458-05); and 10 x 10 tablet Unit Dose-Hospital Pack (NDC 0085-0458-04).

Protect Unit-of-Use packaging and Unit Dose-Hospital Pack from excessive moisture. Store between 2° and 30°C (36° and 86°F).

Schering®
Schering Corporation
Kenilworth, NJ 07033 USA

Rev. 9/93 17790803

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HMA Alliance

Susan L. Foo, President

Nineteen hundred and ninety-four marks the 45th anniversary of the Hawaii Medical Association Alliance—still alive and well, still raising funds and working to improve the community and the medical community. The HMA Alliance has always supported the goals of the HMA—promoting good health in Hawaii through our newsletters, community service and volunteer efforts. We have the best active membership ever; their dedication and hard work have achieved great results. To commemorate the HMAA 45th anniversary, both Governor Wahihee and Mayor Frank Fasi presented very nice proclamations and expressed their sincere appreciation. Mayor Fasi noted that Auxilians should become more active on community boards and decision-making bodies—a very good point!

March 30 was Doctors' Day as proclaimed both nationally and statewide. This year the HMAA coordinated a special two-page Doctors' Day celebration announcement in the *Honolulu Advertiser* with Hawaii health-care leaders providing the $8,000 to pay for the ad. We called it, "A Lei of Aloha to all Physicians on Doctors Day." In addition to the double-page ad, Doctors' Day ceremonies were held in honor of our dedicated and caring physicians at the Hawaii Legislature. In an impressive program, the President-elect of the HMA Fred Holschuh, President of the HCMS Leonard Howard, Physician of the Year Norman Goldstein, Director of Health John Lewin and HMA Legislative Committee chair Stephen Wallach all were honored on the floor of both the Senate and the House of Representatives, along with the presidents of the Alliance and County Auxiliaries. We were especially proud that our Neighbor Island auxilians were present.

The HMAA distributed first-aid kits to the legislators in commemoration of Doctors' Day—they are always well received and bring a lot of attention to both the physicians of HMA and the Alliance. Governor Waihee, Lt Governor Cayetano, and Mayor Frank Fasi also were presented with first-aid kits. We've already received some very nice thank you letters.

Another event in March—The Greatest Show in Hawaii—was a smash hit with some 650 people attending and more than $95,000 raised and pledged ($45,000 in cash receipts and $50,000 pledged) to benefit the John A. Burns School of Medicine through the HMA Alliance Endowment for education and research. For our efforts, the HMAA received commendation and appreciation letters from: Sen Matt Matsunaga, Dr Christian Gulbrandsen, dean of the John A. Burns School of Medicine, Dr K. Tamaribuchi, president of the University of Hawaii Foundation, Dr Norman Goldstein, and Dr Ramon Sy.

HMAA dates to remember:

- May 14—University of Hawaii Medical School Convocation; $50,000AMA-ERF donation to be presented by HMAA president Susan Foo and AHCMS president Paris Stevens.
- June 12 to 15—AMAA Annual Session
- September 17—Aloha Medical Mission fund raiser
- October 7 to 9— HMAA Annual Session and Inauguration in conjunction with the HMA Annual Meeting on the Big Island
- November—MADD Red Ribbon distribution
- December—Christmas Collection drive of usable clothing and toys to benefit the Hawaii Family Stress Center.

Won't you make a commitment and a positive difference by volunteering your support? Please call Joella in the HMA office, 536-7702.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

On March 24 and 25, 1994 the Hawaii chapter of the American College of Physicians held it's annual Hawaii Scientific Meeting. The meeting provides a forum for local institutions to present results of research. The department of Medicine at Tripler Army Medical Center has supported this meeting, regularly preparing results of research and clinical cases for presentation. Tripler representatives Paul A. Fishkin MD (Hematology/Oncology) and L. Harrison Hassell MD (Nephrology) helped with program development as Program Committee members this year.

The John A. Burns School of Medicine (JABSOM) and Tripler Army Medical Center (TAMC) Departments of Medicine prepared total of 13 scientific presentations. Other institutions which presented research included JABSOM Department of Surgery, JABSOM Geriatric Medicine Program, JABSOM Department of Pharmacology, Kuakini Medical Center/Honolulu Heart Program, JABSOM Department of Physiology, and Cancer Research Center of Hawaii. Scientific sessions were moderated by Barry Zacherle MD, Kim Thorburn MD, Gilbert L. Wergowski MD, and J. Craig Holland MD. The ACP Governor for Hawai, Vince Aoki MD, opened the meeting.

Past Hawaii ACP Governor Nadine Bruce has been nominated as a Regent of the ACP, and will likely be elected to that position. ACP representative Walter J. McDonald indicated that Dr Bruce has developed a national reputation for her excellent work within the ACP as Hawaii Governor and that she will be a welcome voice within the governing body of the College.

On Friday evening awards for Scientific Presentations were announced. Three studies from TAMC were selected for recognition. These studies are representative of the ongoing commitment to clinical research at TAMC. "New Evidence for *Rochilimaea* species as the causative agent of cat scratch disease" was presented by Diane K. Noyes MD. "Does air travel predispose to deep venous embolism? A 5-year retrospective case control study" was presented by Alicia R. Mercer MD. Finally, Ronald D. Deguzman presented the results of his study "Appropriateness of ordering hepatitis serological markers." These presentations were made by senior residents, who will unfortunately be leaving TAMC this summer. Their work represents the quality of the TAMC training program and we wish them successful careers as teachers, scholars and physicians.

The Waianae Diet Program: A Culturally Sensitive, Community-Based Obesity and Clinical Intervention Program for the Native Hawaiian Population

Terry Shintani MD JD MPH, Sheila Beckham MPH RD, Helen Kanawaliwali O'Connor CHW, Claire Hughes MS RD, Alvin Sato MPH

The Waianae Diet Program (WDP) is a community-based program designed at the Waianae Coast Comprehensive Health Center in response to the high rates of obesity and chronic disease among Native Hawaiians. Its foundation is a 3-week program of traditional Hawaiian diet and cultural teachings. It employs 8 innovations in clinical nutrition and health promotion theory: 1. Non-calorie restricted weight loss protocol, 2. Dietary clinical intervention, 3. Cultural sensitivity, 4. Transition diet, 5. Whole-person approach, 6. Group ohana (family) support, 7. Community intervention, and 8. Role modeling. It has demonstrated significant weight loss with no calorie restriction, improvement in blood pressure, serum glucose, and serum lipids. It appears to have wide acceptance in the Hawaiian community. More studies are warranted to determine the long-term effect of this program.

Introduction

The Waianae Diet Program (WDP)[1] has been a uniquely successful clinical and community-based health promotion program targeted at the Native Hawaiian population. The program was designed as an intervention to deal with disproportionately high rates of obesity, chronic disease and mortality among Native Hawaiians. With almost no funding initially, and with resources drawn from within a predominantly Native Hawaiian community and its private, non-profit community health center, the Waianae Coast Comprehensive Health Center (WCCHC), it has become one of the most successful health promotion programs in Hawaii.

Because of its success, Hawaii's Office of Hawaiian Affairs (OHA) now provides funding to support most of the WDP activities to stimulate the development of similar programs state-wide. In May 1993, it received the highest national award in the Distinguished Community Health Promotion Program, the "Secretary's Award for Excellence," from the U.S. Department of Health and Human Services.

This article describes the components of the program, its history and current status, the theories and practices implemented in the program that contribute to its success. It also describes the comprehensive nature of the program, including clinical and community-wide health promotion components.

The Waianae Coast Comprehensive Health Center, Waianae, Hawaii

Program

The Waianae Diet Program was designed as a culturally appropriate, community-based intervention with special consideration given to accessibility, reasonable cost and ability to be propagated and sustained in the community.

The primary intervention is a 3-week period of adhering to a strict, traditional Hawaiian diet under close medical monitoring. Evenings are spent dining together and attending education sessions. Education sessions include cultural teachings, nutrition education sessions and motivational presentations. Participants are encouraged to become role-models and thus have an impact on others. Follow-up sessions are designed so the participants will sustain the dietary changes encouraged in the program.

The selection of food consists of those foods eaten in Hawaii before the onset of Western influence: taro, a starchy root similar to potatoes, poi, a mashed form of taro, sweet potatoes, yams, breadfruit, greens (fern shoots and the leaves of taro, sweet potatoes and yams), fruit, seaweed, fish and chicken. All foods are served either raw or steamed in a manner that approximates ancient styles of cooking. The diet approximates that of the ancient Hawaiians which was estimated to contain less than 10% fat, 12% to 15% protein and 75% to 78% carbohydrate.[1] The program teaches not only the traditional Hawaiian diet but also a *transition diet* which provides modern food alternatives for those not previously accustomed to Hawaiian foods, so that the program may be continued as a part of the life style.

As of June 1993, 120 individuals have gone through the formal program in Waianae and hundreds of others have benefited by following the program and forming their own groups to learn and support each other on the diet. Since 1990, perhaps thousands of others have heard about the program through the WDP methodology of delivering the message or by reading the *Waianae Book of Hawaiian Health*. Still others have benefited by follow-

ing the program on an individual basis, through the WDP follow-up programs, and through word-of-mouth from graduates of the program. The program has been so well received that WCCHC has assisted the Hawaii Department of Health (DOH) and other communities on the islands of Kauai, Maui, and Hawaii to develop similar programs through community-based organizations such as Native Hawaiian Health System.

Rationale

Currently, Hawaii is being promoted as "The Health State" by the DOH. The tragic irony, however, is that in Hawaii, the healthiest state in the union from the standpoint of longevity, Native Hawaiians have the shortest life span among all the ethnic groups in Hawaii, and also among the shortest in the United States.[2] Pure Hawaiians have the highest mortality rate from cardiovascular disease[3], stroke, diabetes and cancer as compared to that in all other ethnic groups in the nation. Preliminary data on obesity suggest that Native Hawaiians have one of the highest prevalences of obesity in America, second only to that of Samoans.[4,5] As far back as 1960, studies have indicated high rates of mortality due to cardiovascular disease [6] and risk factors including diabetes,[6,7] hypertension[8,9,10] and obesity[10,11,12] among the Native Hawaiian population. However, no intervention programs for that special population were ever initiated prior to 1989.

Historical evidence suggests that prior to western contact and western diets, Native Hawaiians had little cardiovascular disease or obesity.[13,14] A major contributing factor to the sharp decline in the health of Hawaiians was the change in diet and lifestyle that ensued.

The Waianae Diet Program was designed in response to these disproportionately high rates of death and chronic disease among Native Hawaiians. Since all of the chronic diseases mentioned above are diet-related, it was decided that a program focusing on diet would be the most effective approach.

Background

The concept of the Waianae Diet Program was conceived by the principal author in mid-1987 at the Waianae Coast Comprehensive Health Center and developed together with members of the Waianae Coast Community Committee and WCCHC staff. It was based on the application of 8 main innovative concepts in clinical intervention, health education and health promotion theory. These 8 concepts to be described in greater detail later in this paper are:

1. Non-calorie-restricted obesity protocol
2. Dietary clinical intervention
3. Cultural sensitivity
4. Transition diet
5. Whole-person approach
6. Group *ohana* support
7. Community-wide intervention
8. Role modeling

The program was designed to provide a culturally sensitive, health-intervention program for Native Hawaiian people on the Waianae Coast based on a weight-loss and clinical-intervention protocol using the traditional Hawaiian diet. It was modeled after the healthy traditional diets of many other cultures: Asian, Mediterranean, and American Indian. The weight-loss protocol was based on an innovative non-calorie-restricted approach relying on the low energy density of traditional Hawaiian foods and other traditional foods. It also was targeted at a number of diseases and risk factors including heart disease, hypertension, diabetes and cancer. In addition, it was designed to be the nucleus of a community-wide health intervention program with some elements similar to successful intervention programs conducted in other states.

During the development of the WDP, another project based on a traditional Hawaiian diet using a different protocol was implemented on Molokai known as the Molokai Diet Study (MDS). Dr N. Emmett Aluli, president of a community organization called *Na Pu'uwai* and Dr Kekuni Blaisdell of the University of Hawaii collaborated with Dr William Connor of the University of Oregon in the conduct of this study. The MDS demonstrated the lipid-lowering effect of a 4-week isocaloric traditional Hawaiian diet on 10 Hawaiians who had hyperlipidemia.[15] MDS protocol did not allow participants to lose weight. The MDS proved to be a catalyst for the WDP and accelerated its development. The MDS made it clear that the use of traditional Hawaiian foods in a controlled setting could reverse hyperlipidemia and that the similar WDP concept could be viable.

One of the strengths of the WDP as a health promotion program lies in the structure of the WCCHC's community-based board. It provides for input from the community and the empowerment by the community to place resources behind problems from which the community itself suffers and wants to remedy. It also provides for some measure of cultural sensitivity.

In late 1987, consistent with the WCCHC's community-based philosophy, an advisory committee comprising Waianae Coast community members and health professionals of the extended Hawaiian communitywas formed to carry out the WDP. The advisory committee was one of the building blocks intended to support the community-wide program to promote good health. It provided a means by which the community would invest in the program and help ensure its success. Also, it was hoped that such an advisory committee would provide access to in-kind assistance and help raise funds for the program.

Claire Hughes MS, RD, Native Hawaiian nutritionist (Executive Director of the Governor's Health Promotion and Development Center at the time of her initial involvement), was a member of the planning committee from its earliest stages. Her history of promoting traditional Hawaiian foods for health in the Hawaiian community was a source of strength for the program. She helped ensure that the traditional Hawaiian menu was authentic and conformed to the Waianae Diet protocol. She was co-editor of the *Waianae Book of Hawaiian Health* and the most steadfast member of the committee. Her persistence and dedication was instrumental in the implementation of the WDP.

In late 1988, Helen O'Connor, the former coordinator of the MDS who was living on Oahu at the time, was asked to serve on

the Advisory Committee. Because of her experience with the Molokai Diet and her expertise in reaching communities, she was hired by the WCCHC as the coordinator of the WDP. She not only coordinated the WDP in its early years, but also subsequently assisted in the development of similar programs on the Neighbor Islands. Moreover, she brought a community health worker (CHW) model for outreach workers from the Indian Health Service which has since been turned into a certified program accredited through WCCHC and local community colleges.

Interest in the program was high as prospective candidates were being identified; however, despite numerous requests made to various organizations, funding was not available and the program could not proceed. Increasing demand and the needs of the largely Hawaiian community in Waianae motivated the board of WCCHC to allow the program to begin using the center's own resources.

In October 1989 the first 3-week Waianae Diet Program intervention project was held; it was supported almost entirely by the WCCHC with some help from Kahumana Farm and Community Center and the Honolulu Poi Company. It employed a number of important innovations in culturally sensitive disease intervention, education and promotion of good health.

Among the important clinical results was the finding of weight-loss without calorie restriction, improvement in blood lipid levels (confirming what was found in the MDS), and dramatic improvement in the control of diabetes. In addition, a number of other medical conditions seemed to be improved including arthritis, hypertension, acne and headaches.

The 8 Innovative Concepts of WDP

1. Obesity Intervention

One of the clinical innovations of the WDP is its approach to loss of weight. It is unique in 2 ways: First, the WDP offers a non-calorie-restricted diet that emphasizes the value of the food consumed in terms of its bulk and its low fat, low energy density nature rather than by limiting calories or size of the serving. This approach finds support in studies that have been conducted that show a low fat diet is associated with less obesity[30-32] and may produce weight-loss, [21-24] and studies that have shown the effect on weight loss of a non-calorie-restricted, low-energy-density (LED) diet.[25,26] The Waianae Diet is both low in fat content (less than 10%) and low in energy density (0.83 cal/gm).

Second, the WDP is unique in that it provides a diet program within the context of an ethnic culture. Whether offering it as Hawaiian food or as Japanese or other cultural/ethnic food in the transition diet, this cultural component helps ensure adherence and long-term maintenance of the diet.

The results of the program are consistent with its intent of inducing natural weight loss on a non-calorie-restricted diet. After 3 weeks of eating as much as they wanted, the 21 participants lost an average of 17.1 pounds. Caloric intake decreased about 40%; the satiety level remained high.[1] Long-term results are promising: Over a period of more than 5 years since participating in the program, at least 6 of the original 19 adults have maintained a significant reduction in their weight (8 pounds or more), an improvement over most weight loss programs.

2. Disease Intervention

A second clinical innovation in the Waianae Diet Program is the use of traditional diets of all cultures as an intervention for chronic disease. As indicated above, a number of studies indicate that traditional diets of other cultures are associated with low rates of obesity, cardiovascular risk, diabetes and cancer.[29-32] The WDP applies this information using the traditional Hawaiian diet as a model for nutrition as a primary intervention, and traditional foods of all cultures for maintenance of the dietary intervention. The following are some examples of improvement in clinical markers in participants suffering from various chronic illnesses (Table 1.).

Diabetes.—Perhaps the most striking effect of the diet was the control of blood sugar. In 6 groups of 20 participants, the control of blood sugar was found to be consistently better while the diabetic was on the Waianae diet. One of the participants who had been on 80 units of insulin no longer required any medication after 5 days, and 2 others who were on 60 units of insulin also no longer required medication after 2 to 3 weeks.

Serum glucose.—The decrease in fasting serum glucose was surprisingly large but consistent with similar programs elsewhere using high complex carbohydrate, high fiber diets in the management of diabetes.[35,36] The automatic decrease in calorie intake certainly played a role in the control. In addition, the low glycemic index and the low fat content of the food eaten very likely played an important role.

Serum lipids.—Total serum cholesterol levels decreased significantly, with an average decrease of 14.1%.[1] Initially there were 16 out of 19 participants with cholesterol levels over 200 mg/dl as compared to only 3 at the end of the program. The decrease in serum cholesterol could be attributed to the low fat, low cholesterol content[38,39] of the traditional Hawaiian diet which was about 7% to 12% fat.[1] Weight loss also might have played a part in lowering cholesterol, although moderate weight loss alone has not been known to necessarily induce a decrease in cholesterol.[40] There was a moderate decrease in LDL and a slight but insignificant decrease in HDL and a slight but insignificant reduction in Chol/HDL ratio.

The reduction in triglycerides was quite dramatic; it is consistent with other high carbohydrate diet studies,[35,36] but inconsistent with others that indicate that a high carbohydrate diet causes a rise in triglycerides.[37]

Blood pressure.—A number of studies indicate that dietary intervention in hypertension can be very effective. In the WDP, both systolic and diastolic blood pressures fell significantly. The average systolic blood pressure decreased 7.8% and the average diastolic pressure decreased 11.5%.

Cancer prevention.—The National Cancer Institute (NCI) estimates that approximately 35% of all cancers are diet-related. A number of nutrients have been implicated in the cause and prevention of various cancers. Dietary fat seems to be directly related to a number of cancers such as cancer of the breast, prostate and colon. Dietary fiber appears to protect against cancer of the colon; antioxidant vitamins such as beta-carotene and vitamin C appear to protect against a variety of cancers. Both the traditional Hawaiian diet and the transition diet provide an excellent way to encourage the consumption of low-fat, high-

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fiber diets rich in cancer-preventive nutrients.

Other health conditions.—There have been reports from many of the participants of beneficial effects of the WDP. Individuals have reported improvement in arthritis, asthma, gastritis, fatigue, acne, headaches and impotence. Although such reports must be viewed with some reservation because they are anecdotal and could be attributable to the placebo effect, there is the possibility that the program did indeed cause these beneficial changes.

3. Culturally Sensitive Health Education

The WDP was designed not only as a clinical intervention modality but also to create change in health-related knowledge, attitudes and behaviors. One vehicle of change was the education sessions during each 21-day period. The participants' adherence to the program was high during its 21-day period[1], and the interest in the approach was widespread among the Hawaiian community that it served. One of the reasons for this high rate of success is the program's culturally sensitive approach. The purpose of teaching culture and teaching in a culturally appropriate way was to enhance learning and motivation, to change behavior by breaking down barriers and fostering enthusiasm for the messages in the program.[42] Health education and social science literature supported the value of this approach.

The traditional Hawaiian diet is the primary element designed to reflect culture sensitivity and is the focus of the nutrition-intervention and nutrition-education aspect of the program. The diet is presented as authentically as possible while still conforming to the WDP weight-loss and chronic disease intervention protocol. Only foods eaten by Native Hawaiians prior to western influence are used which provides an excellent opportunity to discuss and teach the history of Hawaii and the cultural ways of the Hawaiian people in the context of diet, life-style and health.

The foods themselves are useful cultural teaching tools. The traditional Hawaiian beliefs regarding food provide an opportunity to present Hawaiian history in the form of cultural teachings. For example *Kalo* (taro) in Hawaiian beliefs is the first born child of *Papa* (Mother Earth) and *Wakea* (Father Heaven) and is the eldest sibling of the human race.[16] Thus when the importance of taro in the diet is taught, the nutritional aspects of taro are presented along with the cultural aspects of the food. This provides for a more meaningful presentation and is more likely to be learned and internalized by the participants.

Cultural values are honored and taught by the *kupuna* (Hawaiian elders) and other teachers of Hawaiian culture together with the Health Education and Nutrition staff of the WCCHC so that messages are woven into the cultural teaching. Topics such as *la'au lapa'au* (Hawaiian herbal medicine) and *lomilomi* (Hawaiian massage) are covered. Such sessions also help improve access to medical care.[43] Four sessions, Monday to Thursday, are provided by cultural or health-related teachers after dinner. Subjects include modern nutrition, traditional foods, *kalo* farming, *ahupuaa* (division of land) systems, traditional healing and other cultural and health topics. Traditional Hawaiian practitioners teach classes on cultural healing practices. Friday is reserved for providing the inward maturing of the participants with gripe sessions and inspirational presentations. Saturday and Sunday are spent with their families.

Participants learn to greet each other in Hawaiian and use Hawaiian words at the project site whenever possible. This serves to honor the language, symbolically represents the restoration of the Hawaiian culture, and contributes to the restoration of the health of the Hawaiian people.

4. Transition Diet

Another unique practice by the WDP is the use of the transition diet. An additional advantage found in the use of traditional Hawaiian food is in the way it provides an effective mnemonic device we call a template. It is a model of a body of knowledge (in this case, a pattern of eating and life-style) that is already known to the participants and can be used to stimulate recall and motivation. This is to some extent based on the idea of looking at the audience not as a target but as a work force as described in Schwartz.[41] In this approach, the message is delivered in a way that recalls information already in the minds of the members of the audience and that can be mobilized to enhance the message. The WDP makes good use of this technique by using the traditional Hawaiian diet as a template for making food choices and substitutions with equivalent foods. Cooking techniques and other aspects of the diet coupled with personal behavior are learned easily in this manner.

5. The Whole-Person Concept

Traditional Hawaiian healing was practiced with the spirit of *Lokahi i ke Ola* or *Ola Lokahi*. In other words, they dealt with the whole person and that person's relationship to the universe. In keeping with this principle and to be sensitive to the culture, elements of spiritual, mental, emotional and physical aspects are included in the teachings.[16] Classes are taught with these elements in mind and special teachers cover these aspects of health. This allows for a broader range of personal and common motives to be discussed openly in order to develop and sustain the adherence to the program during and after the formal period. This approach also allows for the program to be more complete, enjoyable and memorable. For example, in addressing the physical aspect, exercise is presented as an important factor to complement any reputable nutrition or health program. Song and dance can be easily adapted to promoting exercise in an enjoyable manner that also promotes Hawaiian culture. The use of prayer is important to enhance the spiritual aspect for the participants. A class in *ho'oponopono* is useful in dealing with the emotional side of relationships between people, and classes on health deal with the mental aspect in these ways.

6. Family Concept

One of the most powerful tools of the Waianae Diet Program is the bonding that takes place in each group. While social support is an essential part of any diet program, the feeling of support generated in the WDP is extraordinary. The feeling of mutual support and camaraderie creates the essence of family or *ohana*. This provides a strong impetus for mutual support for the

participants to continue ongoing care. One of the principles of the health education component of the WDP is that learning takes place in a non-threatening, family-like group setting.

In addition to creating the essence of *ohana* in each group, the WDP encourages the participants to propagate change within his or her natural family. This is part of the program's purpose: To promote dietary change in a natural network of Hawaiians. This also builds social support that helps foster lasting change in their daily lives.[44] To emphasize the importance of families in the program, couples are especially welcomed because they can support each other, and children are welcome if both parents are accepted.

7. Community Intervention

Studies have been done demonstrating the effectiveness of community-wide health-promotion efforts in reducing cardiovascular risk factors in the late 1970s and 1980s at Stanford,[17] Pawtucket,[18] Minnesota,[19] and North Karelia.[20] The WDP is unique in that it not only incorporates a culturally sensitive educational message, it also employs many elements similar to those in these large intervention programs. The following are some of these elements:

Marketing theory.—The WDP was designed to propagate based on sound marketing principles. Such principles are at the core of successful community health promotion programs such as the program implemented in Pawtucket.[45] A key principle is that WDP was designed with the targeted market in mind. The question, "What does the Hawaiian community want?" was first asked in a context of assessment of needs. Because nutrition programs were high priorities of the Waianae community, the WDP was geared to respond to this wish. The messages in programming the WDP were then carefully designed to suit the demographics of the community and designed to expand easily not only through the WCCHC but also by word of mouth and by written materials (ie, the *Waianae Book of Hawaiian Health*).[16]

Networking with community organizations is very important for 2 main reasons. First, because of the resources required to complete a 21-day WDP and to provide for follow-up, it is important to have some in-kind assistance to the program. Second, networking also provides for a feeling of ownership in the program, which is important to long-term success both on an individual level and on a community-wide level.

The WDP can be described in the context of "diffusion of innovation" theory. It is intended to disseminate information and activities throughout the community, partly on the basis of the diffusion theory which describes the transmission of a new behavior from person to person.

Working with print and electronic media.—The WDP is an agent of change in the broader community and mass media is an important extension of this role. Thus, working with the media is an important part of the implementation of this program whether it is television, newspapers or the radio. Dr Shintani currently has a 2-hour radio talk show to help support dietary change and frequently features the Waianae Diet Program on the show. In addition, he writes an article in the OHA newspaper to provide information to the general public that is consistent with the goals of the WDP.

Fostering other community-based programs.—The WCCHC is a community-owned and operated center. The strength of the WDP lies in the WCCHC board of directors who are community members and users of the health center; they have a stake in the outcome of the program. This helps to ensure that the resources of the center are allocated to serve the best interests of the community. In keeping with this philosophy, it is important to the development of the program for each community to enlist its own team or staff from the community and, where possible, to work through a community-based group. For this reason, it is recommended that each community find a site coordinator for the project from within the community and then strongly network with other community organizations. In addition, if participants who have health problems are intended to be in the program, a physician who is committed to the program should be engaged as part of the team.

8. Role Models

Beyond the diffusion theory, the WDP introduces an additional element we loosely describe as the "propagation theory." The basic philosophy in this element of the WDP approach is that "everyone is a teacher and everyone is a student." Participants are viewed as agents of change; they are actively encouraged to be teachers and motivators through their words and their example. In a culturally sensitive smoking-cessation program, "*A Sus Salud*," a similar approach is used with great success in disseminating a health message through the media.

In most Hawaiian communities there are natural leaders to whom many people look for advice. These individuals are an important part of the team to help promulgate the message throughout the community. Such individuals were asked to fill some of the positions in the program because of their potential for influencing other members of the community.

Conclusion

As described above, the WDP has been effective in generating interest in diet and life-style change among members of a high-risk, hard-to-reach, special population—the Native Hawaiians. The 8 innovations in clinical and community health intervention appear to have made a difference in reaching this population. Short-term results are significant in reducing weight, blood pressure, serum lipids, and serum glucose.

Further studies on this multidisciplinary approach appear to be promising in the potential yield of information that will help in reaching any population in order to improve knowledge, attitudes and to health behavior, and sustain these changes over a long period of time. In addition, it has potentially far-reaching implications in the use of traditional Hawaiian foods and traditional foods of many cultures in the prevention and intervention of a variety of chronic diseases. Moreover, because this intervention is "low tech" it is relatively low in cost. Because it is not only preventive in nature but also an effective intervention, it could replace higher cost medical or surgical intervention in many

➤ *Continued on Page 147*

Omega-3 Fatty Acids in Hawaii Seafood

Harry Ako PhD, Elsie Ota RD, MS, Amy Ogasawara MS

Omega-3 fatty acids, the most potent of which are found in seafood, are of interest because of their effects on cardiovascular and inflammatory diseases and their possible effects on cancer. However, consumers in Hawaii wishing to increase their dietary omega-3 to omega-6 fatty acid ratio are faced with the difficulty that several types of seafood popular in Hawaii and aquacultured seafood new in the marketplace have unknown omega-3 fatty acid levels. The purpose of this work is to determine omega-3 fatty acid levels of selected seafood and fish oil capsules. Several seafoods and some over-the-counter fish oil capsules were sampled and analyzed. Aku eggs, aquacultured hamachi (yellowtail jack from Japan), one sample of turbot, and EPA Plus, Promega, and Omega-3 Super EPA capsules were found to contain high levels of omega-3 fatty acids. Levels were comparable to those in the fatty fishes such as salmon and mackerel. Butterfish, mahimahi eggs; other fish oil capsules (ProEPA and Omega 3) contained moderate levels of omega-3 fatty acids. Fish cakes, seaweed, several lean fishes, and cod liver oil capsules had small quantities of omega-3 fatty acids. It appeared that the omega-3 fatty acid content of aquacultured species studied was significantly higher than in wild caught species. There was a substantial difference between claimed and actual omega-3 fatty acid levels in commercially available fish oil capsules. These findings can help consumers when selecting types of seafood for their diet that are good sources of omega-3 fatty acids.

Introduction

Greenland Eskimos have a very low incidence of cardiovascular disease as compared to the Western population.[1,2] A study of Caucasian Americans, Japanese Americans, urban Japanese, and rural Japanese showed increasing levels of fish consumption.[3] This was correlated with decreasing incidence of death due to heart disease.[4] Another study from Japan compared fishing villagers with farming villagers.[5] Fishing villagers consumed approximately 3 times more seafood than farming villagers. Cardiovascular disease among fishing villagers was almost half that of farming villagers. People who live on the shores of the Mediterranean Sea also have a low incidence of cardiovascular disease.[6] It has been argued that the longevity of the Japanese is because of their low fat diet. However, the Greenland Eskimos who consume large amounts of marine mammal blubber do not have a low fat diet and the diet of the Mediterranean people is as high in fat as the American diet. A common feature of the diets of Eskimos, Japanese, and Mediterranean people is the high omega-3 to omega-6 dietary fatty acid ratio because of the high consumption of seafood and the low consumption of oils from oil seeds, a rich source of omega-6 fatty acids.

All fats are equally calorie dense; however, different fats are made up of different fatty acids. The solid fats such as lard or butter are relatively rich in saturated fatty acids. When eaten in excess they are associated with elevated mortality rates from cardiovascular disease and cancer.[6] Some culinary oils such as olive or macadamia nut oil contain high levels of mono-unsaturated fatty acids.[7] Mono-unsaturated fatty acid oils are known for their healthfulness.[8] Seafood is rich in omega-3 fatty acids and some plant seed oils are rich in omega-6 fatty acids.

Omega-3 and omega-6 fatty acids are polyunsaturated fatty acids differentiated by the position of their first double bond. In omega-3 fatty acids, the first double bond occurs at the third carbon from the methyl end of the fatty acid. In omega-6 fatty acids, the first double bond is located at the sixth carbon from the methyl end of the molecule. Omega-3 and omega-6 fatty acids are biochemical competitors[9] that compete with each other in elongation from C18 precursors to C20 and C22 end products and incorporation into tissue lipids. Unlike other nutrients, body membrane compositions tend to mirror the fatty acids in the diet. Even skin fatty acids reflect diet[10]: The eicosanoids (prostaglandins and leukotrienes) synthesized from these tissue lipids have different effects depending on whether they were derived from omega-3 or omega-6 highly unsaturated fatty acids.[11]

In the following, the marine highly unsaturated fatty acids eicosapentaenoic acid, 20:5n-3 (EPA) and docosahexaenoic acid, 22:6n-3 (DHA) will be discussed. DHA and EPA are many times more physiologically active than linolenic acid (18:3n-3), their precursor from plant chloroplasts in terrestrial species.[12] Omega-3 fatty acids prevent atherosclerosis in hyperlipidemic pigs,[13] delay early restenosis,[14,15,16] and alleviate the symptoms of rheumatoid arthritis.[17,18,19] Evidence is beginning to accumulate that fish oil containing EPA and DHA inhibits tumor initiation and growth in comparison to an oil containing omega-6 fatty acids.[20] DHA is required for the development of intelligence in rats and for the development of vision in human infants.[21,22] It is considered desirable to provide DHA to premature infants since DHA is laid down in the last trimester of pregnancy and

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metabolic conversion of precursors to DHA is probably insufficient to meet infants' needs. Finally, it is becoming clear that DHA is required for stress resistance in fish.[23,24] DHA reduces stress mortality in rats injected daily with isoproterenol[25] suggesting that DHA might be important for stress resistance in terrestrial species.

The purpose of this study was to determine omega-3 fatty acid levels in Hawaii seafood. Many of these seafood and fish oil capsules were of unknown omega-3 fatty acid content. It will be shown that there are several excellent sources of omega-3 fatty acids in Hawaii.

Methods

Sampling.—Fish oil capsules were purchased from discount drugstores; 3 different brands of nori (*Porphyra* spp.) and single samples of the fish cakes and ogo (*Gracillaria* spp.) were purchased from supermarkets. It was expected there would be significant biological variation in some samples; hence, they were analyzed in replicate. Aku (*Katsuwonus pelamis*) and mahimahi eggs (*Coryphaena hippurus*) are actually egg-filled ovaries. Three samples of each were obtained from the local fish auction (United Fishing Agency, Inc.) and they can be purchased at seafood specialty stores in season. Four samples of hamachi (yellowtail jack, *Seriola quinqueradiata*) and 3 samples each of turbot (*Scophthalmus maximus L.*) and butterfish (*Peprilus triacanthus*) were purchased from the seafood sections of local supermarkets. Cultured mahimahi samples were obtained from a research project of the University of Hawaii and the Waikiki Aquarium. Tissue samples from 3 wild caught mahimahi were obtained from the Anuenue Fisheries Research Center.

Chemical analysis:—Wet samples were freeze-dried and pulverized using a coffee grinder. These and the nori samples were extracted according to a method developed in our laboratory.[26] Extraction occurred in a Soxhlet's apparatus with chloroform/methanol (2:1). BF_3/methanol reagent was used to methylate saponified fatty acids. Fatty acid methyl esters were quantified by gas chromatography on an HP-5840A gas chromatograph containing a Restek Stabilwax megabore column.

In all cases, the C17 fatty acid heptadecanoate was added to the original sample as an internal standard and recovery of this fatty acid was measured. Results were corrected for incomplete recovery of heptadecanoate. Analyses with recoveries <67% were rejected and analyses were repeated.

For fish samples, data are reported in terms of 100 g portions that would be eaten (not on a dry-weight basis).

Results

Table 1 shows the claimed and actual values of omega-3 fatty acids in 2 groups of fish oil capsules, the newer, *enriched* fish oil capsules and the cod liver oil capsules. The omega-3 level was calculated by adding together EPA and DHA values. Four out of 5 enriched fish oil capsules claimed 180 mg EPA and 120 mg DHA per capsule for an omega-3 fatty acid level of 300 mg per capsule. As shown in Table 1, EPA Plus and Omega-3 Super EPA contained slightly more omega-3 fatty acids than claimed, while the other capsules contained substantially lower levels of omega-3 fatty acids than claimed. Cod liver oil capsules contained lower levels of omega-3 fatty acids than the enriched fish oil capsules.

Table 1.—Omega-3 Fatty Acid Levels in Fish Oil Capsules (g per capsule)

	Omega-3 Claimed	Actual	Daily Dose Recommended
EPA Plus	0.300	0.305	3-6
Promega	0.307	0.196	6-9
Omega-3/ Super EPA	0.300	0.333	3
ProEPA	0.300	0.143	3-6
Omega 3	0.300	0.097	3-6
Cod liver	0.070	0.150	2
Norwegian cod liver	0.067-0.083	0.040	1-6

Table 2 shows some results of replicated analyses of several types of seafood. Visual inspection suggested that amounts of omega-3 fatty acids among the fish ovaries might vary; within species, some ovaries contained loose eggs as if the female was ready to spawn. Other ovaries contained small, attached eggs. The results, however, showed very little difference among samples. Mahimahi ovary No. 1 was from an aquacultured female. Its omega-3 fatty acid content did not appear to differ substantially from ovaries from wild caught mahimahi. Although hamachi and turbot samples were all purchased at the same store and were packaged identically, there was a wide variation in omega-3 fatty acid levels in both groups of fish. The range of omega-3 fatty acids in the hamachi group was between 0.96 and 6.15 g per 100 g sample and the range among turbot samples was between 0.19 and 2.22 g per 100 g sample.

Table 3 summarizes omega-3 fatty acid and total fatty acids among the samples analyzed in this work and from the literature.[27] Maximal daily recommended doses of fish oil capsules were used in the summaries. Samples were arranged in order of decreasing omega-3 fatty acid level.

Discussion

Our purpose in this study was to analyze omega-3 fatty acids in selected seafood and fish oil capsules available in Hawaii; the tables could be used as a consumer rating list. However, there appear to be some simplifications.

The cold-water, fatty fishes known for their high omega-3 fatty acid content include sardines and salmon. Traditional knowledge holds that cold-water fish are fatty because low water temperature requires highly unsaturated, omega-3 fatty acids to maintain membrane fluidity. Aquaculture provides an alternate explanation. Highly efficient, cold-water carnivores are fatty possibly because they live in waters containing abundant prey. Highly efficient tropical carnivores such as mahimahi or ahi live in relatively barren waters, expend vast amounts of

Table 2.—Variations in Fatty Acid Levels among Replicated Seafood
(g/100 g portion)

	Total Fatty Acids	Omega-6	Omega-3
Aku ovary 1	2.88	0.26	1.40
Aku ovary 2	3.66	0.20	1.85
Aku ovary 3	3.98	0.17	1.73
Average	3.51±0.46	0.21±0.04	1.66±0.19
Mahimahi ovary 1	1.54	0.05	0.77
Mahimahi ovary 2	1.35	0.03	0.58
Mahimahi ovary 3	1.34	0.06	0.56
Average	1.41±0.09	0.05±0.01	0.64±0.09
Hamachi 1	9.88	0.50	4.32
Hamachi 2	13.50	0.65	6.15
Hamachi 3	8.69	0.58	2.33
Hamachi 4	3.54	0.26	0.96
Average	8.91±3.57	0.50±0.15	3.44+1.97
Turbot 1*	7.05	0.14	2.22
Turbot 2	0.41	0.03	0.19
Turbot 3	0.42	0.03	0.20

*Average of duplicate extractions

Table 3.—Omega-3 Fatty Acids in Selected Seafood

	Omega-3	Total Fatty Acids
Hamachi	3.44±1.97	8.90±3.57
Turbot 1	2.22	7.05
Sardines, canned, tomato sauce[26]	1.94	12.0
EPA Plus	1.83	4.27
Salmon, canned pink[26]	1.83	6.05
Promega	1.76	3.15
Salmon, Chinook (king)[26]	1.71	10.4
Aku ovary	1.66±0.19	3.51±0.46
Mahimahi, aquacultured	1.34±0.11	5.76±0.71
Omega-3 Super EPA	1.00	2.20
ProEPA	0.86	2.22
Ulua[26]	0.77	9.47
Tuna, white canned in water[26]	0.76	2.6
Mahimahi ovary	0.64±0.09	1.41±0.09
Omega 3	0.58	1.62
Butterfish	0.57±0.03	4.75±0.12
Shrimps[26]	0.53	1.73
Snapper (eg, opakapaka)[26]	0.39	1.34
Mahimahi, frozen	0.34±0.02	1.46±0.37
Cod liver oil	0.30	0.72
Norwegian cod liver	0.24	0.78
Tuna, yellowfin (ahi)[26]	0.24	0.95
Mahimahi, wild, Hawaii	0.21±0.01	0.57±0.03
Turbot 2 and 3	0.20	0.42
Chikuwa (broiled)	0.11	0.24
Nori	0.096±0.04	0.22±0.09
Tempura (fried)	0.09	1.65
Kamaboko	0.04	0.10
Ogo	0.04	0.52

*g per 100 g portion or daily dose

energy while hunting, are not able to deposit much fat, and are therefore low in omega-3 fatty acids. Hamachi are aquacultured in Japan where approximately 160,000 tons of hamachi are cultivated annually.[28] Hamachi is a member of the jack family and like ulua (Table 3) should contain moderate amounts of tissue omega-3 fatty acids. When omega-3 fatty acid values for replicated hamachi samples were averaged, hamachi had the highest omega-3 level of all seafood.

Turbot samplings provided a different look at the effect of aquaculture on omega-3 fatty acid levels. Turbot is a lean fish and should belong to a low omega-3 group; samples 2 and 3 fell in the low omega-3 fatty acid group. However, turbot sample 1 had an omega-3 fatty acid value of 2.22 g/100 g portion, placing it among the richest sources of omega-3 fatty acids. We speculate that turbot samplings were a mixture of aquacultured and wild caught fish.

Such speculation is not necessary for mahimahi. A substantial difference in mean omega-3 fatty acid levels was seen between mahimahi caught at sea (0.21 g/100 g portion) and those aquacultured (1.34 g/100 g). The latter would be a good source of omega-3 fatty acids; the former exhibits the fatty acid profile of a very lean fish. It has been stated that aquacultured fish are poorer in omega-3 fatty acids than wild caught fish.[29] Mahimahi aquaculture (in the first author's laboratory) suggests that this does not have to be the case. It demonstrates that food can be designed for specific nutritional purposes, in this case high DHA content.

Fish ovaries or *eggs* seem to be a good source of omega-3 fatty acids. This may be an example of folklore having a scientific basis. Female fish with ripe ovaries are sold at a premium in the Far and Middle East. Presentation of fish heads to the most esteemed members of oriental families is also folklore having a scientific basis. Visual and neural tissues are high in DHA.

The best of the newer enriched fish oil capsules also are high in omega-3 fatty acids. All of the enriched fish oil capsules contained more omega-3 fatty acids than cod liver oil capsules. The 2 cod liver oils tested low in omega-3 fatty acid level which could relate to the toxic effect of high concentrations of fat soluble vitamins in cod liver oils. Dose levels of cod liver oils should be limited to avoid vitamin A overdose. Probably because of this factor, newer sources of fish oil for capsules, less destructive processing methods, and more efficacious storage methods are responsible for higher omega-3 fatty acid levels in the newer fish oil capsules. Two samples (EPA Plus and Omega-3 Super EPA) were sold in amber bottles to prevent light damage and came sealed to prevent oxidation of fatty acids.

Seaweed and fish cakes were low in omega-3 fatty acids which is not surprising because sea plants are low in fat and fish cakes are prepared from lean fish such as awa (milk fish) or pollock.

Are any of the seafood or fish oil capsules a panacea? The answer to this question is no. Most of the seafood is very low in fatty acids. They could be used in weight loss programs and to decrease dietary fat intake while providing high quality dietary protein. However, other sources of energy must be minimized. Seafood is low in saturated fatty acids which are a risk factor[6] and could be used to lower dietary saturated fatty acids if other

sources of saturated fatty acids also are minimized. A steak and lobster dinner with butter is an example of a mixed-effect meal. Some functions such as the development of vision in premature infants seem to require DHA.[21] But other positive health benefits of omega-3 fatty acids are probably more concerned with the dietary omega-3 to omega-6 ratio. The seafood richest in omega-3 fatty acids probably offers the best hope of changing the dietary omega-3 to omega-6 ratio; a significant change in the ratio requires lowering the omega-6 fatty acid intake. This is one reason why the Mediterranean diet is interesting. After Japan, Spain consumes more seafood per capita than any other country. The Mediterranean diet uses olive oil, a culinary oil low in the omega-6 fatty acid, linoleate (18:2n-6). A Hawaii equivalent would be aquacultured mahimahi cooked or marinated in macadamia nut oil which is almost linoleate free.

The omega-3 to omega-6 ratio concept also illustrates the difficulty of using the fish oil capsules. Adding omega-3 fatty acids to a diet high in omega-6 fatty acids would probably not do much good although numerous controlled studies have shown that fish or fish oil capsules can alter the body's omega-3 to omega-6 fatty acid ratio. Simopoulos[9] reviewed the increase of omega-6 fatty acids in people's diets worldwide and he also reviewed the anthropological data suggesting that humans evolved with a dietary omega-3 to omega-6 ratio of about one-to-one.

According to National Marine Fisheries studies, seafood consumption in Hawaii is substantially higher than on the Mainland. Perhaps some people in Hawaii have less of an aversion to seafood than people on the mainland U.S. This may be related to differences in death rate due to heart disease between Mainland and Hawaii people. The difference is substantial. According to Brian Horiuchi (Hawaii Department of Health) deaths from heart disease in Hawaii were 185.9 per 100,000 in 1987. In the same period, the death rate due to heart disease on the Mainland was 313.4 per 100,000. The difference in mortality could be due to seafood consumption but it is probably not by lowering of blood cholesterol levels. Eating seafood does not have a substantial effect on blood cholesterol levels.[30]

Acknowledgment

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➤ *(Continued from Page 141)*

cases and help alleviate our modern health-care crisis.

Table 1.—Waianae Diet Program Results

Mean change in risk factors after 21 days on a traditional Hawaiian diet without calorie restriction

Risk Factor	Begin	End	Change	% Change	p value*
Weight (pounds)	264.0	246.9	-17.1	-6.5	<.0001
Cholesterol (mg/dl)	222.3	191.1	-31.2	-14.1	<.001
HDL (mg/dl)	37.7	34.9	-2.8		NS
LDL (mg/dl)	147.2	130.0	-17.2	-11.2	<.02
C/H ratio	6.3	5.7	-0.6		NS
Triglycerides (mg/dl)	236.2	138.2	-98	-41.5	<.01
Glucose (mg/dl)	161.9	123.4	38.5	-23.8	<.01
Systolic pressure (mmHg)	133.6	122.1	-11.5	-8.6	<.01
Diastolic pressure (mmHg)	84.2	75.3	-8.9	-10.6	<.01

*p value based on a two-tailed "student's t" test.
n=19 excelpt for LDL where n=17 due to invalid values caused by high triglycerides.
Adapted from Shintani[1]

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Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

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Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

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Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

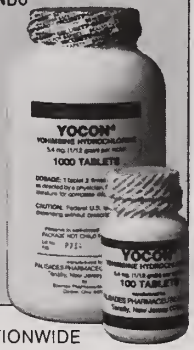
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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HMA President's Message
➤ *(Continued from Page 130)*

and questions raised.

While Mrs Rubin noted her belief that the Hawaii State Legislature authorized the Department of Human Services to proceed with the HCFA waiver necessary to begin QUEST, Senator Levin indicated that current legislative action could affect the program. The State Legislature is expected to adjourn on May 2. Representatives of the accounting firm working with the State on QUEST reported to the audience on the considerable savings expected to be realized with the implementation of QUEST. It was noted that the rising costs of Medicaid are of grave concern to the State. Dr Jack Lewin, Director of Health, also noted the concerns of the administration in addressing the needs of the indigent while also being cognizant of the fiscal crisis in the Medicaid program. Dr Lewin noted the State's concerns that all Medicaid enrollees be assured of a "medical home," that a 2-tiered system of care be elimintated, and that coverage issues needed to be addressed—especially in some Neighbor Island communities. He noted that the transition phase will require understanding until there is some integration of the current system and the purchase of service contracts that are in existence with QUEST.

HMA will keep its members informed about QUEST developments as they occur.

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nant cardiac dysrhythmias. (2) The speaker for their meeting in March is Dr Hosobuchi. (3) The society remains involved with the family practice residency program pursuing the possibility of making it a joint venture between Hilo Hospital, the University and Queens.

Kauai.—Dr Richard Goodale of Kauai County Medical Society reported that the Wilcox Hospital emergency room was moved because of remodeling and will take a year to complete.

Maui.—Dr Shitamoto of Maui County reported that Dr Lewin spoke to Maui physicians on March 1 regarding health system reform.

West Hawaii.—Dr Theresa Smith reported that Dr Lewin is scheduled to talk to West Hawaii physicians in March.

Dr Lewin discussed two major bills before the legislature: 1) Prepaid Healthcare Act and 2) Health Alliance. He discussed the issues and what is likely to happen if these bills are passed or not passed.

Independent Physicians Network.—The first steering committee meeting is scheduled for March 7. This committee will evaluate the feasability of developing an HMA Independent Physician Association.

The HMA shared a booth with the Hawaii Dermatological Society at the Health and Fitness Expo. There was excellent participation of medical student volunteers and Dr McDonnell provided videos and a dramatic slide show on tobacco abuse.

Today's Thought
by The Rev Paul Osumi

On the wall of a doctor's office is this description: "If you are poor, work.
If you are rich, work.
If you are happy, continue to work.
If sorrow overwelms you,work.
If disappointment comes, work.
If faith falters, work.
When dreams are shattered, work.
No matter what ails you, work.
Work is the greatest material remedy available.

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News and Notes Henry Yokoyama MD

Thought for the Month

"We learn wisdom from failure much more than success. We often discover what will do by finding out what will not do; he who never made a mistake never made a discovery." *(Samuel Smiles)*

The Great Papaya Controversy

University of Sussex researchers reported that papaya is an effective contraceptive and powerful enough to abort pregnancy. Papaya contains papain which interacts with progesterone according to the British researchers.

Researcher **Tharmalingam Senthilmohan** says, "If progesterone and papain interact, the level of progesterone needed to maintain pregnancy can be affected. If one fruit a day is eaten deliberately by a pregnant woman for two or three days, she can abort within a week. Abortion could be ensured by eating unripe fruit that contains a higher papain concentration."

Malcolm Topping, senior lecturer in the English university's biomedical laboratories says the papaya could be the basis for a new form of contraception.

Senthilmohan says the fruit has long been used as a traditional remedy for contraception and abortion in the Indian subcontinent.

Tod Aeby with the Ob-Gyn Department, John A. Burns School of Medicine says, "I don't know what to make of that. It seems a pretty outrageous statement. People eat papaya every day and still have babies."

William Fong, chairman of the Hawaii Section, National Association of Obstetricians and Gynecologists was skeptical, but commented that, "Papain, especially if you eat the seeds, is a very powerful laxative."

Oncology Conference

A 37-year-old Japanese man had a 1 cm^2 gastric lesion removed a year ago which was reported by pathologist **Larry McCarthy** as "Adenocarcinoma, intestinal type, fundus, lesser curvature, with perhaps early invasion." A year later, the patient was evaluated for a GI bleed and gastroenterologist **Warren Ono** scoped him and biopsied a "mixed intestinal and diffuse carcinoma" interpreted as a second primary.

Moderator **Ken Sumida** was curious, "Why a multifocal Ca in a 37 year old?" Ono admitted, "I don't really know, but probably 'bad genes.' Three immediate members of the family had lung cancers." Sumida: "Is peptic ulcer disease a risk factor?" Ono: "Probably—and certain blood groups and racial groups, esp. the Japanese, who lack milk products in their diet. I feel that early gastric cancer is a different animal."

Radiotherapist **Lois Mastrofrancesco** agreed that peptic disease and probably *Helicobacter* were risk factors for gastric Ca. Ono added, "There is an overall decline in gastric cancer, but an increase in asymptomatic gastric cancer in Hawaii, esp. in the young population."

Re asymptomatic gastric Ca and screening:

Ono: "There is no cost-effective screening for gastric cancer." Chemotherapist **Kaye Kawahara** wondered, "What would it cost to screen for gastric Ca esp. in someone with a strong family history?"

Ono gave rough figures, "Outpatient cost: $300 to $400, pathology costs $200, and endoscopy $600."

Kawahara: "So roughly $1000?"

Re UGI series:

Radiologist **Howard Arimoto**: "In Japan their UGIs are meticulous air contrast studies. At Kuakini, double contrast UGIs now are standard procedure."

Creating a Pain-free Environment Simulating the City of Hope Experience

(Notes from Paul Herman Caluzzi's lecture at a KMC oncology conference, March 3, 1994)

Pain assessment.—Scale 0 to 10

Pain management.—Drug therapy

a. Mild pain: Non-opioid; ± adjuvant
b. Moderate pain: Weak opioid;± non-opioid, ± adjuvant
c. Strong pain: Strong opioid; ± non-opioid: ± adjuvant

Non-opioids.—(20 or more drugs) eg, Tylenol No. 4; Loricet, etc.

Opioids.—a. Round the clock; b. Oral route c. Titrate

Strong opioids.—a. Morphine b. Oxymorphone (Numorphan) c. Methadone d. Meperidine (75 mg Demerol equals 7 1/2 mg Morphine)

e. Hydromorphone (Dilaudid) f. Levorphanol g. Fentanyl (Duragesic)

Mixed agonist/antagonist.—a. Pentazocine (Talwin) b. Nalbuphine (Nabain) c. Buterphanol (Stadol)

Partial Agonist.—Buprenorphine (Buprenex)

• Advantages of oral Morphine: q 24° dosing; titrate: No highest dose and no minimal dose;



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optimal dose: 120 to 240 mg q 24°.
• PCA = controlled release and immediate release
• Oral/IV dose: 3 mg: 1mg
• All oral morphines are the same

Co-analgesics.—Trilasate, Naprosyn

Adjuvant analgesics.—NSAIDs; antidepressants; anticonvulsants; corticosteroids; neuroleptics; antihistamines; benzodiazipines; antispasmodics, etc, etc.

Health Care: Queasy about Clinton's Plan

(*Time* magazine March 14, 1994)

Writer George Church writes: "The public grows fearful of Clinton's plan and shows little faith in alternatives. Is reform doomed this year?"

Time/CNN Poll Results:

"Do you favor or oppose President Clinton's plan?"

	Jan 17-18	March 2-3
Favor	50%	41%
Oppose	33%	45%

"Do you think Congress should pass that bill in its current form?"

Yes	5%
Yes with minor changes	35%
Yes with major changes	32%
No, reject plan	19%

"Under the health care reforms the Administration is working on, do you think the amount you pay for medical care will:

Increase	70%
Decrease	9%
Remain the same	17%

"Polls for the first time show more people against the President's plan than for it. A *Time*/CNN poll last week disclosed 45% against and 41% in favor—a startling swing from 50% for and 33% opposed as recently as January. Some apparent reasons: 70% now think Clinton's plan would make them pay more for medical care; 55% believe they would have less choice in which doctors to see, and 41% fear that the quality of care they receive will go down versus only 16% who expect it to improve. And the more people think they know about health care reform, the less they like Clinton's plan; the 22% who said they understand the debate 'very well' opposed it 60% to 37%."

Commentary on the Clinton Health Plan

"Barefoot Doctors vs Scroogecare" (*Time*, January 10, 1994—Summary of Richard Brookhiser's thoughtful essay.)

Brookhiser, an opponent of the Clinton Health plan, lists "the unspoken motives of the health plan proponents" as 1. *Power lust* 2. *Arrogance* and 3. *Resentment of doctors.*

The *lust for power* or the conviction that increased state power is the solution to all ills. (The health plan proposal boosts regulation over an industry that occupies one-seventh of the nation's economy.) The potential problem-solvers look forward to a busy future and to the political rewards that will flow.

Arrogance: The second secret trait of the Clintonites is the arrogance of lawyers. Lawyers are paid to put deals together, ie, the restructuring of the American health industry.

Resentment of doctors: esp of the prosperous American doctors—is an after-image of the 60s—(that crucial decade in the character formation of the people who now rule us). Back then, the bright-thinking college students were taken with the romance of barefoot doctors (those Cuban and Chinese medics who lived among the people, treating simple ailments with simple means).

"What can opponents of the President's health plan reveal to match this collection of prejudices?"

Regarding the 37-million citizens lacking health insurance:
• 1//6 are twenty-somethings who have not bothered to incur the expense because they think they are immortal.
• The large remainder—those between jobs, those working part-time jobs and those who simply are not working.

The cost of helping them by either the Clinton plan or a single payer system such as the Canadians use would be rationing of care and general lowering of the level of care. (Talented and self-motivated potential doctors will refuse to become paper pushers in white coats.)

To avoid these grim alternatives: 1. Individuals, instead of employers, would buy health insurance and receive tax benefits for doing so. 2. The poor can be treated as they are now, through Medicaid or with means-tested tax credits.

Brookhiser writes, "If the choice is between the status quo and the Clinton or Canadian plans, I choose status quo. The American health system is the best in the world."

Medical Malapropisms

"Stitches"

(The *Journal of Medical Humor*, Nov-Dec 1994)

• "A previous doctor told me that I have a heart wormer."
• "My sister had a myocardial infraction."
• "My brother had cancer of the cologne."
• "Do I have sea roaches of the liver?"
• "I was told I have corrosive liver."
• "I'm vomicking up flame."
• "My baby is weaseling."
• "I have fireballs in my eucharist."
• "I had an atomic pregnancy."
• "I'm breaking out in whelps."
• "I've had cervical displeasure."

(Submitted by Dr Frank Reynolds of Mililani, HI)

Life in These Parts

Cancer Screening.—Some 15,000 Hawaii residents ages 64 to 74 will participate in a national survey to determine if screening for prostate, lung, colo-rectal and ovarian cancers can reduce the incidence of deaths. Hawaii is one of 10 screening sites and the survey will be conducted by Pacific Health Research Institute with **Fred Gilbert Jr, MD** as principal investigator and will be supported by the National Cancer Institute. The specific questions addressed are: 1. Does screening with flexible sigmoidoscope reduce deaths from colon and rectal cancers? 2. Does screening with chest x-rays reduce deaths from lung cancer? 3. Does screening with pelvic exam, CA 125 and transvaginal sonography reduce deaths from ovarian cancer? 4. Do digital exam and PSA tests reduce deaths from prostate cancer?

Health QUEST

In February, the State's controversial program to curb Medicaid remained in limbo. Support came from Kaiser Permanente, the Mental Health Association, the Waianae Coast Comprehensive Health Center and the Hawaii Primary Care Association. Opposed were the Hawaii Medical Association and the Hawaii Federation of Physicians and Dentists.

HMA executive director **Jon Won** argued that Health QUEST would cut services from an average $3,800 per person a year to $1,500 if the program enrollment was capped at 120,000 (ie, the number presently under Medicaid, SHIP and the gap group). This would lower the quality of care; patients would have no choice of physicians and would not be allowed to see specialists.

Prescribing by Nurse Practitioners

Our logical HMA executive director **Jon Won** asked the pointed question, "How do you prescribe if you don't make a diagnosis? And how can you make a diagnosis if you haven't received the proper training?"

Same Sex Marriages

Shay Bintliff MD testified before the Senate Judiciary Committee, "The life I have lived and wish to live with my partner, irrespective of race, color, or gender harms no one, exploits no one, and creates two happy people contributing to their community. And I challenge anyone to find fault with a such a life."

The Magic Spray

(Condensed version)

(Excerpts from *Stitches*, Nov/Dec 1993)

A patient came to see me with back pain. She positively reeked of B.O. and exuded a powerful garlic smell. The stench was overwhelming. In order to approach and examine her, I sprayed both the patient and the room with Lysol spray. Several monthes later, she telephoned for an appointment. "Doctor, after you sprayed me well over six months ago, my back pain completely disappeared and has only now come back. I want another treatment with your magic spray." *(Harry Stevens, Montreal)*

Will You Let Your Patient Go to Pot?
Suppose your glaucoma patient suggests that the use of cannabis will help maintain the eye pressure in a normal range. After all, various so-called *experts* argue that smoking marijuana is an effective use of the drug. Now the government has announced a decision to reconsider the medical use of the drug, so the question has more validity. Proponents claim that cannabis will ease the discomfort of chemotherapy, reduce the depression associated with AIDS, multiple sclerosis, and migraine, as well as alleviate the symptoms of glaucoma. But remember, it is an illegal substance and any proof that a doctor encouraged a patient to break the law could result in disciplinary action.

Days of Whine and Poses
And now here, from our own data bank in Maui, Hawaii, are the top 10 reasons why the Clinton Health Care Reform Plan is in trouble (with apologies to David Letterman)
Number 10.—Senator Moynihan (D-NY), chairman of the Senate Finance Committee, says "There isn't any health care crisis."
Number 9.—Clinton's major ally in the House, Rep Dan Rostenkowski, convicted DUI motorist and unofficial cash officer of the Post Office Department, is in considerable legal trouble.
Number 8.—The Business Roundtable announced that it would support Rep Jim Cooper's (D-TN) managed competition plan and not the White House plan.
Number 7.—The National Governors' Association failed to support major features of Clinton's plan, especially global budgets and employer mandates.
Number 6.—The Congressional Budget Office announced that the Clinton Plan would actually increase the federal deficit, not reduce it as claimed.
Number 5.—The U.S. Chamber of Commerce reversed itself and no longer supports the Clinton Plan.
Number 4.—The Congressional Budget Office determined that mandated health care premiums would be considered a tax—a powerful tool for opponents of the plan.
Number 3.—Medical inflation slowed to 5.4% in 1993, suggesting that the cost problem is solving itself.
Number 2.—Hillary and her attorney colleagues are up to their collective assets in trying to obfuscate Whitewatergate and the death of White House counsel Vincent Foster.
And the Number One reason why the Clinton Health Care Reform is in trouble is—medical alliances won't work!

What the Crowd Requires is Mediocrity of the Highest Order. If It Says "One Size Fits All," It Doesn't Fit Anyone.
The Clinton proposal involves groups of large numbers of people forming into purchasing alliances to negotiate with organizations of accountable health-care providers. But the facts are that there is no way rural America (or even urban) can form such alliances. One study estimated that more than 60 million citizens simply could not fit into such plans. The entire state of Wyoming could not form one alliance. Obviously any all-inclusive, boiler-plate prescription of health care for all Americans is bound to fail. The cultural variations contrasting New York City, Louisiana bayous, California suburbs, and Hawaii ranch towns, to mention just a few, are far too diverse for lumping.

It is a Simple Task to Make Things Complex, But a Complex Task to Make Them Simple.
By definition, anencephaly is incompatible with life. There are many body parts that can be sacrificed, other parts that can be transplanted, and a human being can still live a useful and productive life. But being without a brain is a big-time handicap. Yet in Falls Church, Virginia, despite doctors' and ethicists' advice that medical treatment is inappropriate, unnecessary and futile, the mother has cited the Federal anti-dumping law to force the hospital to aggressively treat the infant. To date the courts have sustained the mother, and most recently a U.S. Court of Appeals ruled 2 to 1 that the hospital must continue to render emergency medical treatment. Somehow, some way, the allocation of medical resources must be logically and humanely defined. The question here is not one of rationing care, the proper inquiry for our legal captors is—*Is anybody thinking?*

Don't Burn Your Bridges Until You Come to Them.
Two of ophthalmology's major organizations, the AAO and ASCRS, are hammering against the Clinton Health Care plan for cataract "centers of excellence.' Rather than expend resources in that battle, they should review the results of HCFA's cataract PPO plan which was originally pushed by Gail Wilensky. Of the original six cataract organizations selected by HCFA, two refused up front to sign the reduced-rate contracts. Of the other four that signed in hopes of increasing their volume, they mostly found that did not happen. The Dallas group experienced an increase of 5% to 7% (they anticipated 20%) or close to the growth that otherwise was expected. The Ohio group hasn't experienced any volume increase. Our leadership gurus must recognize that dollars are not the only defining factor in selection of a physician, and they should properly be battling with our limited political capital to maintain the patient/doctor fee-for-service tie.

Addenda
▲ Advice to Hillary—The Chappaquiddick Law—The sooner and in more detail you announce the bad news, the better.
▲ Leonardo da Vinci developed a design for a contact lens in 1508.
▲ If you view a problem closely enough, you will recognize yourself as part of the problem.
▲ Anything is edible if it's chopped finely enough.
▲ Paying alimony is like feeding hay to a dead horse.

Aloha and keep the faith
rts
■



Throughout May

American Cancer Society flags fly at the Hawaii State Capitol as a reminder that your **American Cancer Society** is here for you!

"**Give a Day in May**" on Maui; one day from each person can help beat cancer!



May 25

Free skin cancer screenings at selected **Liberty House** stores provided by the members of the **Hawaii Dermatological Society** as a reminder to "Practice Safe Sun - Hawaii!"



May 27

KGMB-TV, at 7:30 p.m., "**Profiles in Survival**" TV special with Hawaii people and national celebrities sharing their inspirational stories

May 30 - Memorial Day

Remember loved ones and friends with Memorial Donations in their names to the American Cancer Society. Call the nearest office listed in the phone book white pages or the Hawaii Pacific Division in Honolulu at 1-800-ACS-2345 weekdays except holidays.



June 5

"**Cancer Survivor's Day: A Celebration in the Park**" at Kapiolani Park Bandstand; 9-11 a.m. for cancer survivors, their family and friends, caregivers, and people concerned about cancer. Entertainment & fun! *Come celebrate life!*

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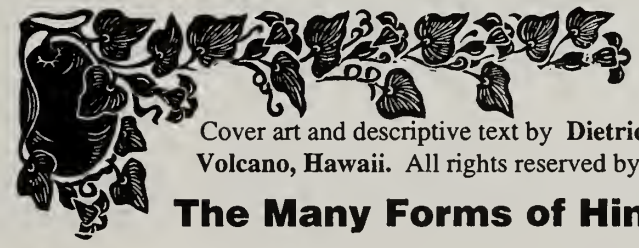
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The Many Forms of Hina

The goddess Hina, in one of her many forms, was known as a healer. In this capacity she often took the form of *lele* bananas which were used in weaning children.

This special, tall type of mountain banana was planted near an altar dedicated to the gods. *Lele* bananas were thought to have the unique ability to fly (*lele*) to the gods and obtain permission for weaning the child. Although the goddess Hina was the presiding deity of this ceremony, women were strictly forbidden to eat *lele* bananas.

Another meaning of the word *lele* is to have passed menopause or for the breasts to cease producing milk.

Curiously enough, this particular Hina was also the goddess of the sunrise and sunset, and her healing specialty was children's thrush disease.

Letter to the Editor

The *Journal* welcomes letters in good taste on any topic. All letters must be signed with the writer's correct signature and include the address and telephone number for our verification. Letters should be on a single subject and no longer than 200 words. Letters of any length may be trimmed.

Send to: Letters to the Editor, Hawaii Medical Journal, 1360 S. Beretania St., Second Floor, Honolulu, HI 96814.

Dear Dr Goldstein:

Thank you for the copy of the *Journal*, which contained your editorial reflections on the Legislature and the legislative process.

I suppose everyone wants to be appreciated, but I find it especially refreshing when the observer is part of a profession that also is very much in the public eye.

Great events are afoot in Hawaii and the nation as we consider how best to deliver health care. Your recommendations are and will continue to be a big help.

Sincerely,
Norman Mizuguchi
President of the Senate
State of Hawaii

Editorial Norman Goldstein MD

Mice are not men!

When a study was published in the *Journal of the National Cancer Institute* dealing with enhanced growth of melanoma and fibrosarcoma *in mice* by three antihistamines, pharmacists', allergists' and dermatologists' phones went "off the hook" with patient queries.

Hydroxyzine (Atarax) has been available for many years. Two newer and very popular antihistamines, loratadine (Claritin) and astemizole (Hismanal) and hydroxyzine were injected into mice. The mice developed larger tumors faster than controls.

The Food and Drug Administration and the manufacturers of these antihistamines are doing more extensive studies as a result of the work done at the Manitoba Institute of Cellular Biology.

The wire services picked up this *hot news item* and got the fear message out even before the *Journal* was available in Hawaii. We could not even get the *Journal* paper via MEDLINE or Fax for a few days, but CNN-TV and our daily newspapers had the story the next day!

At this time, there is no reason to stop prescribing these very effective antihistamines. Dr Lorne Brandes, the lead researcher for the Canadian team, said patients, "should use them for as short a period as possible, and only when really needed." Good advice, Dr Brandes, not just for these drugs, but of all medications.

Norman Goldstein MD, Editor

Autism in Hawaii

In 1992 the Hawaii State Legislature created an autism project in order to help the state adapt to the new and hopeful knowledge about autism that affects diagnosis, treatment and patient outcome. The recognition of autism and the developmental disorders as static encephalopathies which can often be dramatically improved by rehabilitative and special educational services (analagous to stroke victims), has led to the awareness that many of the severely handicapping aspects of autism are in fact preventable, and that early screening and intervention can save parents a great deal of misery and the state great savings in the costs of institutional care.

As part of the 4th annual autism educational workshop on ***"Autism...Building Bridges Together"*** to be held at the Hawaii Prince Hotel in August, the HMA, American Academy of Pediatrics—Hawaii Chapter, and the Hawaii Psychiatric Medical Association will present a special program for physicians on autism.

Guest speakers at the program from 6 pm to 8 pm on Thursday, August 4, 1994 will be B.J. Freeman PhD from UCLA Medical Center and David Homes, director of the New Jersey Eden Family of Services.

The July issue of the *Journal* will feature a manuscript by L. Poon, N. Partika and W. Bolman on *Autism in Hawaii: New Hope in the Treatment of Autism in Hawaii.*

The authors hope that the presence of an autism project in Hawaii, combined with aroused community awareness, will allow Hawaii to adopt the prevention and cost-effective models present in New Jersey, California and North Carolina.

These family and community-based coordinated service systems utilize both autism-specific and generic disability services in order to provide a full range of service options for persons with autism. Such a system not only can prevent the needless handicap in the higher functioning autistic child, but also maintain the more severely impaired, low functioning autistic child in the community.

Hawaii is now moving in this direction. It is hoped that physicians will support these efforts.

The special program for physicians will be held at the HMA office. Call 536-7702 or Fax 528-2376 for information and reservations.

Norman Goldstein MD, Editor

Horticultural Activities at the Hawaii Medical Library

Physicians who only use phone, fax and computer searches to the Hawaii Medical Library and do not have the opportunity to visit our library are missing the developing *Hawaii Healing Plant Garden.*

The rear courtyard is being transformed into a living permanent display of plants which had accepted medicinal uses in traditional Hawaiian medicine and were either indigenous to the Hawaiian Islands or Polynesian introductions.

The following plants are now growing well in the garden:

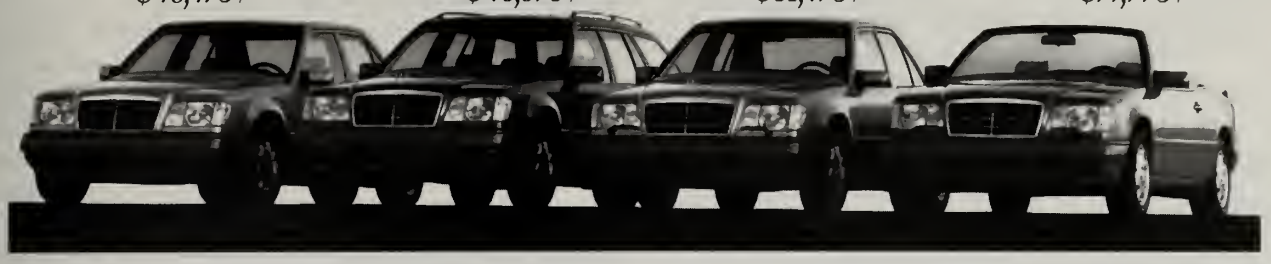
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Medical School Hotline

John A. Burns School of Medicine
Nanette L. K. Judd RN, MPH
Director, *Imi Ho'ola* Program
Office of the Dean

Opportunities in Medicine for Native Hawaiians

A major effort at the John A. Burns School of Medicine is to provide opportunities in medicine for disadvantaged minorities from Hawaii and the broader Pacific. When the medical school was established in 1967, there were fewer than 10 Native Hawaiian physicians practicing medicine in Hawaii. Given this situation, the school developed a formal program in medical education for disadvantaged students.

In April 1970, the Dean's Guest Program, known as *Kulia*, was awarded a grant from the Health Manpower Division of the U.S. Department of Health, Education and Welfare. Students in the program could complete medical school training in five years instead of the usual four. They were required to pass all of the same rigorous examinations and achieve the same standards for graduation as their regular classmates. At the termination of federal funding in 1978, the school's commitment to increasing the number of disadvantaged students in medicine continued. *Kulia* students are now on a four-year track with the rest of the students, and all students have an option to extend their training if needed.

Postgraduate education impact programs require a pool of prepared minority students from which to draw. In 1972, the *Imi Ho'ola* program was established to prepare post-baccalaureate students from disadvantaged programs for entry into medical school. The program serves as a *feeder* into the John A. Burns School of Medicine. The target population consists of Pacific Islanders, specifically Hawaiians, Filipinos, Samoans, and residents of Guam, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, the Republic of Palau, and the Republic of the Marshall Islands.

To date, 285 students have participated in *Imi Ho'ola*. Annually, up to 20 baccalaureate students are selected to participate in a curriculum that emphasizes study skills and instruction in the natural and social sciences and humanities. One hundred thirty-nine (49%) graduates of *Imi Ho'ola* have been accepted into the John A. Burns School of Medicine. Sixty-seven percent have graduated from the School of Medicine; 21% are currently enrolled; and 12% have been dismissed or withdrew. Of these graduates, more than a third are Native Hawaiians.

In September 1993, the medical school received a federal grant to establish the *Native Hawaiian Center of Excellence*. One of the Center's goals is to continue the emphasis of training physicians who are committed to the care of the indigenous people of this state. This grant has allowed the school to consolidate 24 years of various program efforts for minorities into a coordinated, comprehensive initiative. The enrollment of Native Hawaiian medical students now stands at 14% of the school's total enrollment. While this rate is higher than the enrollment for the University of Hawaii Manoa campus (near 7%), it is still lower than the 20% estimate of the Native Hawaiian population in the state.

The medical school continues its firm commitment to make medical careers possible for disadvantaged minorities. This determination is best demonstrated by the number who have graduated from this medical school as a direct result of its affirmative action programs.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Marshall Islands Medical Survey

In the early morning of March 1, 1954, a thermonuclear device code-named Bravo was detonated on a tower at Bikini Atoll as part of a nuclear weapons test series. Radioactive debris from this device deviated from projected trajectories due to wind shifts and an unexpectedly large energy yield. As a result the cloud of fallout deviated to the east contaminating several atolls in the northern Marshall Islands, rather than drifting over the open seas to the north. As a consequence, 253 native inhabitants along with 28 American servicemen and 23 Japanese fishermen were exposed to variably severe doses of ionizing radiation. Marshallese inhabiting Rongelap, Ailingnae, and Utirik Atolls and a group of American servicemen on Rongerik Atoll were caught within the fallout field. It was two to three days before evacuation to Kwajalein Atoll was accomplished by navy units. The Japanese fishing vessel *Fukuryu Maru 5* was exposed 80 miles east of Bikini.

The immediate effects of this exposure were well documented during a two-month observation period by medical teams assembled at the Kwajalein Naval Base. Nausea, vomiting and diarrhea occurred within 48 hours in about two-thirds of those most heavily exposed, on Rongelap. Less heavily exposed people suffered from pruritis, conjunctival irritation, and later epilation was experienced by almost all subjects with cutaneous symptoms. The severity of skin lesions was proportional to the amount of fallout material. On Rongelap fallout was described as similar to snowfall; it actually whitened hair and adhered to skin. Epilation affected half of the group on Rongelap. Hematologic abnormalities were seen in proportion to the exposure. Lymphocyte and granulocyte counts fell by 50% in the Rongelap population, and returned to normal by one and two years respectively. Long-term sequelae have not been observed except for one fatal case of acute myeloblastic leukemia in a young man who was one year old at the time of exposure.

In 1955 Brookhaven National Laboratory (BNL) began a program to diagnose and treat radiation-related disease in the exposed population of the Marshall Islands. This program was

instituted under the auspices of the Atomic Energy Commission and now continues under the Department of Energy (DOE). The obligation and policy of the medical program is to provide diagnosis and treatment for any type of tumor, since there is no way to determine if an individual lesion is radiation related. Another radiation-related disease being monitored is hypothyroidism.

During the past 38 years the following tumors have been identified by the Brookhaven National Laboratory Marshall Islands Medical Team:

Breast carcinoma (1), adenomatous colon polyp (1), cervical carcinoma (1), colon carcinoma (1), laryngeal carcinoma (1), thyroid cancer (10), pituitary adenoma (2), lung carcinoma (1), fatal brain tumor (1), skin cancer (2).

The BNL/DOE Marshall Islands Medical Program consists of two yearly missions of one month each. Medical examinations and ambulatory care is provided. Patients requiring complex care or evaluation are referred to district hospitals in the Marshall Islands or to Straub Hospital in Honolulu. The program is JCAHO-accredited and conducts radiation-disease surveillance modeled after the American Cancer Society guidelines.

In March, 1994 three physicians from Tripler Army Medical Center are participating in the BNL/DOE Marshall Islands Medical Program. They will participate in the health screening program and medical clinics. A program of continuing medical education will be presented to local physicians and follow up of patients seen a Tripler will be accomplished. We are pleased to be able to participate in this program which presents a unique medical challenge and allows us to contribute to the local Pacific community.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

Historical Notes

Today we often take for granted the emergency services of 911, ambulances, trauma teams, and Medevac. But how were these emergencies handled in the old days?

In an interesting book entitled *A Photographer in the Kingdom: Christian Hedemann's Early Images of Hawaii* by Lynn Davis, we find an interesting look into life of a century ago. Filled with fascinating photos and stories of the early days, there is the story of Christian Hedemann (one of Hawaii's first photographers) and his trip from Maui to The Queen's Hospital in October 1879.

Stricken with "inflammatory rheumatism...he became too weak to walk, and it was decided to risk the difficult crossing to Honolulu where he would get the best medical care. The invalid was placed in a lidless box resembling a coffin, and put aboard the steamer *Lehua*, accompanied by his fore-bearing wife, Meta, who was again pregnant, and their infant son, Ferdinand."

It so happened that King Kalakaua and Queen Kapiolani and their retinue were also aboard. Meta, who was miserably seasick, had stretched out on a huge mattress on deck and was attempting to sleep when she suddenly discovered that the King was stretched out beside her. He too was seasick, but managed to sleep and snore loudly. Meanwhile, the Queen and her ladies took care of the baby.

On arrival in Honolulu, Hedemann was taken to The Queen's Hospital where in two months he made a complete recovery. "Though he had the attention of two doctors, the hospital had no nurses, and day-to-day care fell largely to the patient's family and native stewards who helped bathe him and do the really hard work." Meta resided at Queen's with her husband and child. Hedemann returned to Maui in December and became one of the leading photographers of his day, leaving us with many valuable photographs of life in the early days.

Margery Hastert
Historian
The Queen's Medical Center

HMA Alliance

Susan L. Foo, President

The HMA Alliance met with Honolulu Police Chief Michael Nakamura on May 19 in his offices at the new police station on Beretania Street. The Alliance had scheduled the meeting to present Chief Nakamura with 500 "Just Say No To Drugs" cups, pens and frisbees that the Alliance had purchased to be distributed throughout the community. It was a very refreshing and informative meeting, and we were pleased to learn that Chief Nakamura has been actively working on drug abuse prevention in our community. Accompanying the HMA Alliance President to the meeting with the chief were HMAA President-elect Lillian Nishi, AHCMS President Paris Stevens, AHCMS President-elect Susan Wong, Past President Maureen Lau, Antoinette Nip and Vinnie Nip, Lauri Madanay and Spencer Madanay, and Jodi Yip Young, who had coordinated the meeting. The Alliance also presented $1000 to DARE, Drug Abuse Resistance Education founded by the Honolulu Police Department.



On May 26, Paris Stevens and I presented $1000 to the American Heart Association Student Research Fellowship Awards. This was the Alliance's first year to participate. The program was chaired by HCMS President-elect Dan Canete, who also served as the master of ceremonies. The HMA Alliance scholarship was presented to Teresa Seo, a senior at Moanalua High School.

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HMA President's Message Andrew Don MD

Can a Fee-for-Service System Prevail in a Managed Care Environment?

There were five of us who completed ENT residency training at Los Angeles County–University of Southern California Medical Center. I set up my practice in Maui, Hawaii, while the other four remained in California. I soon realized that the reimbursements for my services were definitely lower than that of my former ENT colleagues in California. California's fee-for-service reimbursements were increasing at a rate more rapid than the reimbursements allowed by Hawaii's tightly controlled usual, customary and reasonable insurance carrier, in which 90% of Hawaii physicians participate.

As costs rose steadily in California, the fee-for-service system was easily replaced by capitated managed care programs deemed to be more cost effective. In Hawaii, the employer-mandated health insurance program brought about near-universal coverage, less uncompensated care and a larger risk pool. Perhaps the slower rate of growth in Hawaii's health care costs and physician reimbursement has allowed the fee-for-service program to continue while elsewhere in the country there has been rapid growth in capitation programs. We would like to believe that Hawaii's physicians, given the independence to use their ability and best medical judgment, have been instrumental in maintaining a cost-effective system that has resulted in better performance standards than elsewhere.

Physicians are quite naturally concerned about the State's decision to launch Med-QUEST, a managed competition system to replace the Medicaid program and approved by HCFA for a 5-year trial period. After watching Hawaii evolve from a plantation system of capitation to the fee-for-service system in the mid-30s, and watching a welfare system evolve from the *wooden bench* free clinics to the Medicaid program that *mainstreams* the indigent population, we cannot help but wonder about the ultimate effect on the quality and continuity of care. While Medicaid patients received the same care as private patients, the physicians often provided care to the indigent patient at less than the cost of their overhead. After these many years of humanitarian service, the State has not acknowledged the charitable contributions made by physicians or recognized the valuable insight physicians can provide in containing the burgeoning costs of the Medicaid program.

It is somewhat refreshing to hear Marvin Hall, president and CEO of HMSA, which has been the dominate health insurer in Hawaii, speak to reaffirm his commitment to providers in the fee-for-service system. HMSA is the only insurer of the five awarded Med-QUEST contracts that will offer a modified fee-for-service system of reimbursement, although it will utilize primary care providers as case managers. However, mere commitment from a health insurer will not preserve fee-for-service in this competitive marketplace. It will require all physicians to be conscious of quality, cost-effective health care and to utilize resources wisely and prudently.

Why keep fee-for-service? In order to maintain the high standard of quality health care we have today, a pluralistic system is required in today's competitive market. Fee-for-service offers choice to patients to select their own physicians when the need arises. Physicians work to care for the patient, not to satisfy a health care plan. Patients select physicians based on their known reputation for excellence, not because a health care plan directs them to a physician.

In any health care plan, the patient's choice must be preserved. The health care plan must not allow financial incentives to interfere with medical judgment. Health care plans should be prohibited from establishing arrangements with *disincentives* to refer patients. A mandatory point-of-service option should be included in all plans with limits on out-of- pocket expenses to the patient. All health plans must establish arrangements to provide a full range of specialized care for enrollees. Finally, medical and surgical specialists working with primary care physicians must begin to develop practice parameters and guidelines on the appropriateness and timeliness of referrals.

If these conditions are met in a health care plan, I believe the ultimate quality seen in the fee-for-service system will be preserved.

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The Accessory Bile Duct of Luschka and Bile Leakage in Laparoscopic Cholecystectomy

Desmond K.W. Wong MD, BS

Postoperative bile leakage has been reported to occur in 0.2% to 1.5% of patients undergoing laparoscopic cholecystectomy.[1] One of the not-so-common causes is the unrecognized accessory cystic duct of Luschka.[2] We have prepared a case report of bile leakage due to unrecognized accessory bile duct during a laparoscopic cholecystectomy and a recommended technique for recognition and prevention.

Case Report

On April 12, 1993, a 52-year-old man with symptomatic cholelithiasis underwent surgery by using the laparoscopic approach. The gallbladder was dissected off the liver bed in the routine manner using the hook electrocoagulator after the cystic duct was ligated and divided. The cystic duct was small so a cholangiogram was not obtained. It was divided after Endoclips were applied, leaving a very adequate stump between 2 sets of clips. Postoperatively the patient manifested evidence of bile leakage by having recurrent and excessive abdominal pain and toward the fifth postoperative day developed a minimal amount of jaundice. The CT scan showed only a minimal amount of bilateral pleural effusion and a tiny amount of fluid on the liver edge. Subhepatic collection could not be recognized on the CT; the HIDA scan showed evidence of bile leakage. Clinically the patient did not show any signs of sepsis. The ESR was 46 and the WBC ranged between 10,800 and 15,600/c mm during the entire postoperative course. Total bilirubin was 3.5 mg/dl and direct component was 2.1 mg/dl. ERCP was not performed because the equipment was not available. The patient underwent laparotomy and operative cholangiogram through the cannulated accessory bile duct of Luschka which revealed a 1 mm-wide bile duct, 2 mm to 3 mm long, draining a small portion of the right lobe of the liver. The cystic duct stump was easily identifiable at laparotomy and was found to be securely closed by the Endoclips. Definitive treatment consisted of ligation of the duct of Luschka, peritoneal lavage and drainage. Following this, the patient recovered without any further problems.

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Discussion

During laparoscopic cholecystectomy, although the anatomy can be well visualized, the technique of using an electrocoagulator exclusively to dissect the gallbladder off the liver bed prevents identification of the accessory cystic duct because the duct probably is sealed while being transected, and therefore no suggestion of bile leakage is evident. In this case, at laparotomy, the accessory duct of Luschka was determined to be quite short, less than 5 mm in length, and only about 1 mm in diameter. This suggests that dissection of the infundibulum portion of the gallbladder from the liver bed should probably be performed with sharp and blunt dissection using the Endoshears and/or Maryland dissectors. Any tube-like structures should be partially incised sharply with Endoshears to detect whether or not it is an accessory bile duct. If blood vessels are encountered, they can be treated with electrocoagulation. Using this technique may have more problems with hemostasis, however, it would certainly prevent bile leakage from an unrecognized accessory cystic duct. Routine drainage following laparoscopic cholecystectomy has not been performed, nor is it recommended by others. It has been estimated that accessory bile duct of Luschka occurs in 5% to 30% of individuals.[3] This is quite inconsistent with the number of bile leaks, and certainly other surgeons have not routinely identified this anomaly. Routine operative cholangiogram through the cystic duct would probably not show most of these accessory ducts.[4] Endoscopically placed common bile duct stents would probably not be sufficient to close such a bile duct leak. CT-guided drainage is probably effective if a clear-cut collection can be demonstrated.[5] Biliary peritonitis will require laparotomy ligation of the leaking bile duct and peritoneal lavage[6] as was done in this case. One distinguishing feature of bile leakage from the accessory duct of Luschka is that hepatic bile is probably sterile; although biliary peritonitis occurs, it does not cause sepsis.

Conclusion

Bile leakage may occur in laparoscopic cholecystectomy from the unrecognized divided accessory cystic duct of Luschka. In such cases, the patient may not demonstrate sepsis, although an unusual amount of abdominal pain, leukocytosis and low-grade jaundice might be exhibited. Identification of bile leakage is best demonstrated with an HIDA scan,[5] though CT scan may be helpful, and if collection occurs, CT-guided drainage may be

sufficient to correct the problem. Laparotomy and ligation of this divided accessory cystic duct and peritoneal lavage are indicated when no localized collection is demonstrated. Small bilateral pleural effusions are telltale signs and can be easily demonstrated with chest x-ray. In cases of unusual abdominal pain following laparoscopic cholecystectomy, a chest x-ray is helpful for further studies. Early treatment will shorten duration of morbidity. A suggestion to improve the surgical technique dealing with this problem is presented.

Acknowledgements

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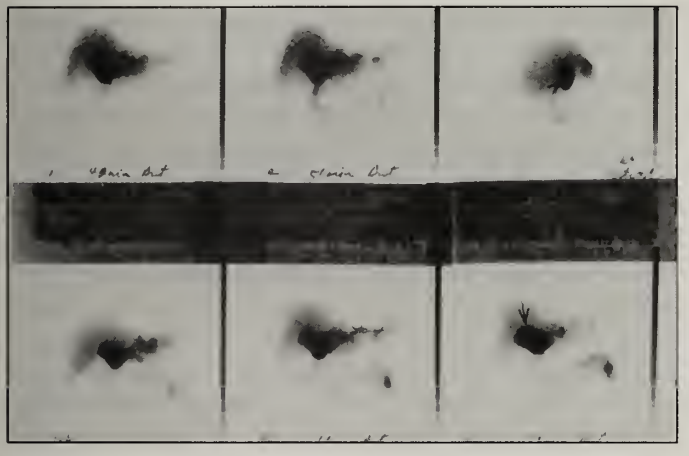


Fig 1.—Postop HIDA scan demonstrating abnormal collection of bile at the former site of the gallbladder.



Fig 2.—Cholangiogram through the cannulated accessory bile duct.

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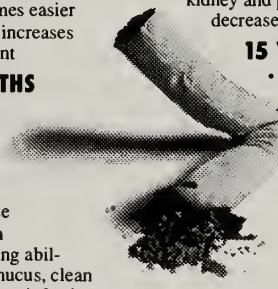
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Psychological Response to Disaster: Implications for Hawaii

Linda S. Godleski MD, Kenneth N. Luke MD, Janet E. DiPreta MD

Given the frequency of natural disasters in Hawaii, it is important for practitioners to be aware of the numerous resulting psychological responses and risk factors, especially those unique to Hawaii. Practical guidelines are presented for practitioners, both in providing leadership during the disaster and in screening for psychopathology thereafter.

Numerous and varied natural disasters occur in Hawaii. Nine hurricanes have caused destruction to the islands since 1950 (Hiki 1950, Della 1957, Nina 1957, Dot 1959, Celeste 1972, Kate 1976, Fico 1978, Iwa 1982), culminating in Hurricane Iniki which resulted in $1.8 billion damage in 1992. Tsunamis on the Big Island in 1946 and 1960 resulted in 173 and 61 deaths, respectively. Since 1950, 12 earthquakes registering more than 6.0 shook Hawaii, with the 1975 earthquake registering 7.2 and causing both damage and fatalities. The 1950 Mauna Loa lava flow destroyed 2 communities and the 1960 Kilauea flow devastated another. The continuing Kilauea eruption since 1983 has consumed more than 200 homes in 4 communities at a cost of more than $65 million. Furthermore, Hawaii's flash floods, tornadoes, mudslides, and high winds result at times in property damage and even death.[1]

Overview of Disaster Literature.—Initial information regarding psychological responses to trauma was derived from war studies. As far back as 1922, Sargent[2] described psychological responses to combat, followed by World War II reports,[3] holocaust-victim follow-up,[4] Korean[5] and Vietnam[6,7] war veteran data, and Desert Storm reactions.[8] The classic non-war disaster literature began in 1946 when Adler,[9] Cobb,[10] and Lindemann[11] studied the reactions to the Coconut Grove Nightclub Fire in Boston. In the 1950s Wallace,[12] Tynhurst,[13] and Glass[14] began studying natural rather than man-made disasters, such as the 1956 Massachusetts tornado. In 1972, Hurricane Agnes with its resultant extensive flooding caused massive property damage and homelessness in northeastern Pennsylvania.[15-17] This prompted the passage of the 1974 Disaster Relief Act which mandated NIMH to provide mental health training and education for disaster workers.

Since that time, psychological responses have been studied during numerous other natural disasters including hurricanes (Agnes 1989[18] and Iniki 1992[19]); tornadoes (Missouri 1973,[20] Australia 1974,[21] North Carolina 1984,[22] Alabama 1989[23]); floods (Minnesota 1978,[24] Illinois 1986[25]); volcanoes (Mount St Helens 1980,[26] Armero 1985[27]); earthquakes (Mexico 1985,[28] San Francisco 1989[29-34]), and brush fires (Australia 1983[21,35-37]).

Reactions to major technological disasters such as Three Mile Island 1979[38] have been analyzed, and smaller scale technological disasters like the plane crashes of 1985[39] and 1987[40] provide additional data. Finally, man-made disasters are reported such as the 1987 mass murder in Arkansas,[41] the 1988 Chicago shooting spree,[42] and the 1978 Chowchilla school bus kidnapping.[43]

Expected Response to Disasters.—Twenty-five percent of the population can be expected to survive a disaster without any discernible impairment[44] while another 25% demonstrate "normal stress reactions." Normal symptoms include anger, sadness, shock, irritability, apathy, agitation and denial.[45] Lindemann[11] emphasized somatic distress among the symptoms of normal grief, including respiration alteration, lack of strength/exhaustion, and digestive symptoms. Horowitz[46] describes a normal progression of phases from outcry, denial, intrusion, to working through to completion.

When the normal stress responses become disproportionate or prolonged, discernible psychopathology can result. Raphael,[21] Madakasira[22] and Smith[40] found that 54% to 59% of individuals develop a diagnosable psychiatric disorder immediately after a disaster, up to 41% 10 weeks later, and up to 22% one year later. Most common DSM-IIIR[47] diagnoses, in order, include major depression, post-traumatic stress disorder, generalized anxiety disorder, and substance abuse. Often patients experience more than one such diagnosis after a disaster following a catastrophe. Smith[40] found a 41% rate of post-disaster major depression, defined as lasting longer than 2 weeks with significant physical symptoms (changes in weight, sleep, energy and activity), morbid preoccupation with worthlessness/guilt, marked functional impairment, and recurrent thoughts of suicide or death. Moreover, 100% of those with a previous diagnosis of major depression had a recurrence after the disaster.

Smith[40] also reported a post-traumatic stress disorder (PTSD) rate of 22% to 29%, while Madakasira[22] found an even higher rate of 59%. PTSD is characterized by at least one month of

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persistently reexperiencing the traumatic event by intrusive thoughts, dreams, or flashbacks; persistent avoidance of stimuli associated with the trauma or numbing of general responsiveness; and persistent symptoms of arousal.

Generalized anxiety disorder (GAD) was reported at 20% to 29%[40] in disaster victims. GAD is defined as at least 6 months of disproportionate and excessive anxiety or worry with symptoms of motor tension, autonomic hyperactivity, vigilance and scanning.

Finally, post-disaster substance abuse occurs at a rate of 14% to 22%.[40] Abusers after the disaster are not necessarily the same ones as prior to the event; furthermore, about half of the abusers meet the criteria for dependence.

Hawaii's Risk Factors[19].—Factors unique to Hawaii that could effect psychiatric sequelae include: (1) Island disaster phenomenon, (2) previous disaster experience, (3) prior refugee trauma, and (4) distinct cultural attitudes toward nature.

Hawaii's island disasters have certain elements that distinguish them from those on the Mainland. With discrete boundaries, limited supply lines invariably by sea or air, and insufficient natural resources, Hawaii's residents are particularly vulnerable to isolation, similar to what Black[48] described in Hurricane Hugo on St Croix.

Prior trauma is included among risk factors for post-disaster psychiatric disorders. Since many of Hawaii's residents have already experienced a natural disaster here, their anxiety responses to future catastrophes may be accentuated. This is supported by DeMan's findings in previous flood victims in California[49] and Thaggard's findings of PTSD symptoms during bad weather in previous hurricane victims.[23] Furthermore, many Southeast-Asian refugees in Hawaii have recently fled from the traumas in their homeland. These refugee-related traumatic experiences also would be expected to increase the incidence of post-disaster psychopathology.[30,50]

Finally, the relationship of human beings to nature can be critical in understanding differences in the pattern of disaster response in diverse cultures.[51] A harmonious relationship (*lokahi*) with the environment has always been important to the Hawaiian people. Natural occurrences are attributed to the gods who are respected for both their positive and negative effects. For example, *Pele*, the volcano goddess, is appreciated for her earth-forming gifts as much as she is feared for her destructive abilities. This Hawaiian belief system of interpreting nature as both constructive and destructive may have a tempering effect on psychological sequelae of natural disasters.[19]

General Risk Factors.—Demographic risk factors not specific to Hawaii include: Sex, age, support systems, socioeconomic factors, preexisting psychopathology, and the intensity of the disaster.

Shore[26] found that about twice as many women as men developed the onset of primary psychiatric disorders following the Mount St Helens' eruption. Frattaroli[30] identifies those at the extremes of age (children and elderly) as "situationally vulnerable" to disaster. Both Murphy[52] and Farberow[53] point out that lack of support groups may lead to increased psychopathology, particularly if a support was lost during the catastrophe (eg, death of a family member). Additionally, Bolin's studies demonstrated that post-disaster psychological problems were correlated with lower socioeconomic status.[54]

Whether or not pre-diaster psychopathology predicts post-disaster disorders remains controversial. Hendin,[7] in studying Vietnam veterans, found that pre-existing maladaptive coping led to post-disaster psychopathology. Frattaroli[30] in post-1989 San Francisco earthquake studies points out that pre-disaster clients of the mental health system are at high risk for developing psychiatric sequelae. North and Smith themselves found conflicting evidence. When studying survivors of a 1987 jet plane crash into an Indianapolis hotel, 90% of those with pre-disaster psychiatric diagnoses developed post-disaster psychopathology.[40] Conversely, while studying witnesses to a 1987 mass murder in Arkansas, they found that only 20% of subjects with a previous psychiatric diagnosis had a recurrence.[41] Madakasira likewise found no significantly statistical difference in PTSD based on previous mental illness after 1984 North Carolina tornadoes.[22]

Evidence indicates that profoundly mentally ill patients are capable of coping with stresses associated with natural disasters without exacerbation of their underlying illness. Chronically psychotic patients at Hawaii State Hospital demonstrated no objective signs of immediate decompensation during the Iniki storm, in the midst of visible threat to safety, property damage on the grounds (dormitory roofs blew off, windows broke, trees were uprooted and power was lost), confined quarters, and inability to contact family.[19] Austin[45] and Black[46] found that psychotic patients during Hurricane Hugo yielded to the reality principle and rose to a higher level of functioning, requiring surprisingly little antipsychotic medication, at least temporarily. By the fourth day after the hurricane, however, their pre-disaster symptoms returned.

Finally, level and intensity of exposure to the disaster has been found to correspond with increased psychopathology. Elements of terror (ie, threat of injury or death), horror (ie, exposure to grotesque stimuli), suddenness, unexpectedness, unpreparedness, scope of property damage and loss of lives, and directness or degree of involvement with the disaster have been found to affect those involved.[40] Shore's studies[26] demonstrated that persons with the highest levels of exposure to the Mount St Helens volcanic disaster had the greatest increase in onset of psychiatric disorders.

The practitioner should be aware, however, that a person need not actually experience the disaster to result in psychopathology. The mere threat of disaster may be enough to trigger a valid psychiatric response. Kiser[55] demonstrated a mild but prevalent PTSD-like reaction that arose from exposure to prediction of a New Madrid earthquake that never even occurred. Furthermore, practitioners should be aware of the near-miss phenomenon[17] or survivor guilt. In these cases, psychiatric sequelae result from a disaster situation in which individuals have barely escaped being a victim, shattering psychological defenses which maintain a sense of invulnerability.

Recommendations for Health Care Practitioners.—During the disaster, the practitioner is likely to be placed in a

leadership role. Whether at hospital, clinic, or shelter, the health-care worker may be asked to define an organizational strategy to approach the event.

Arana[57] believes successful disaster management requires a framework of communication, planning, and flexibility. Black[39,48] recommends the creation of a nurturing environment or "libidinal cocoon." Comfort[57] defines effective disaster management as a goal-seeking system with continuous inquiry, fostering cooperation and enabling interaction to increase information between the leaders and the population.

The authors[19] propose that an effective organizational approach during the disaster should include: (1) Keeping the population fully informed with continuous briefings, and purposeful placement of radios and televisions in all occupied areas; (2) Encouraging widespread participation in reality-based preparatory activities, eg, involve the population in securing the building and gathering their essential items should evacuation be necessary; and (3) Involving the population in anticipatory problem solving by openly sharing concerns about potential disaster-related problems while allowing others to participate in the development of strategies to deal with them. This approach incorporates aspects of Arana,[57] Black[39,48] and Comfort's[57] concepts, leading to the empowerment of the population, cooperation, increased information and broader-based strategic problem solving.

The role of the practitioner after the disaster usually involves staff coordination, population education, mass group process facilitation, and screening for serious psychopathological reactions.

Jarvis[31] describes the major post-disaster tasks as staff realignment, training, and coordination. Specialized tasks, such as the establishment of a crisis counseling hotline, are described by Blaustein.[32] Austin[45] emphasizes the importance of educating the public about normal versus pathological responses along with information about coping strategies. Ponton[34] addresses the need to inform parents about how to deal with child victims, as well as integrating post-disaster education for children into the school process. Cole[33] further recommends that practitioners be available to the media to provide large-scale education for the public.

One of the major services that health-care workers can provide is to serve as mass group-process facilitators. In that role, they can establish a forum to talk about the experience, help with problem solving, suggest realistic limited goals for restorations, encourage time for friends and family, and provide support for the victims.[45]

Furthermore, the practitioner is absolutely critical in screening for psychopathology after the disaster, especially for two reasons: First, as Penick[20] and McFarlane[36] point out, 26% to 66% of persons with post-disaster psychiatric disorders present with physical symptoms. Many victims are unaware of the link between physical and psychiatric symp-



toms. Unless the practitioner has a keen awareness of this, patients may be misdiagnosed and treated incorrectly. Second, Swartz's study[42] demonstrates the reluctance of post-disaster victims to use mental health services. Especially in smaller communities, psychiatric treatment can be hampered by pride in independence and self-sufficiency, limited acceptance of mental illness, and a general tendency to reject the unfamiliar.[53] The non-psychiatric practitioner can be instrumental in facilitating acceptance of the appropriate psychiatric referral and treatment.

Finally, health-care workers should be sensitive to the stress of the crisis helpers, including themselves. Many disaster workers are victims themselves, and as such are subject to increased burnout.[15,37]

Conclusion

Given Hawaii's numerous and varied natural disasters, it is imperative for practitioners to learn from previous disaster studies. Approximately one-half of the victims may develop psychiatric disorders after the event with major depression, post-traumatic stress, generalized anxiety and substance abuse disorders being most common. In addition to general risk factors discussed, those unique to Hawaii include island disaster phenomenon, previous disaster experience, and prior refugee trauma. Cultural attitudes toward nature may actually ameliorate the disaster effects.

Furthermore, it is important for practitioners to be aware of disaster leadership models as it is likely that health-care workers will be placed in leadership roles during such events.

Finally, the practitioner will be crucial in screening for post-disaster psychopathology since many victims present with physical symptoms and are initially reluctant to use mental health services.

Acknowledgment

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HMA Council Highlights

The HMA Council meeting on April 8, 1994 was called to order at 5:36 pm by President Andrew Don. Members present were: Drs A. Don, F. Holschuh, J. Chang, C. Lehman, J. Spangler, C. Kam, R. Stodd, A. Kunimoto, L. Howard, E. Bade, R. Goodale, R. Lee-Ching, D. Canete, H.K.W. Chinn, P. Chinn, P. Hellreich, R. Hollison, K. Kurohara, M. Shirasu, C. Wong, J. Betwee, P. Kim, C. Kadooka, A. Bairos, W. Chang, W. Dang, G. Goto, J. Lumeng, J. McDonnell, S. Wallach, N. Winn; HMA Alliance President Susie Foo and Board; guests Drs K. Kurohara, E. Montell; Junior Ekau of *No Kamea Nou Ke Aupuni* Productions, Linda Miguel and Chuck Wothke of Waianae Coast Comprehensive Health Clinic.Staff.—J. Won, B. Kendro, N. Jones, P. Kawamoto, J. Asato, J. Estioko, and A. Rogness, recording secretary.

Dr Don reported that he attended the "Partnership in Action" meeting in Washington and testimony was heard from senators and respresentatives on health system reform. He noted the Clinton reform package is not likely to pass; however, some type of reform will be developed. The AMA position is "VOICE + CHOICE + COVERAGE = AMA support." Voice means that the provider and medical profession give input; Choice means patients should have their choice of physician; Coverage means that everyone should be covered.

The Alliance presented a short video from last year's "Hawaiian Monarchy Fashion Show" which highlighted HMA's physician and staff models. The Alliance also honored Mr Junior Ekau with an award for providing his videotaping services at no charge. Mrs Linda Miguel of Waianae Coast Comprehensive Health Center presented the Auxiliary to the HCMS and HMA Alliance with certificates of appreciation.

Actions

1) Council voted to approve the nomination of Dr Robert Oishi to serve on the HMA Cancer Commission as representative of the University of Hawaii.

2) Council voted to recommend the HMA Partners and HMA Development Company encourage the current leaseholders in the HMA building to establish smoke-free offices and to *immediately* implement the smoke-free building policy in new leases and renewals.

3) After discussion of the role of specialists in the care of patients and primary care and concerns regarding HMA's role as an independent organization, Council moved that the HMA Executive Committee formulate and present a policy of the HMA's stance in terms of health care in the future. The HMA will send an independent survey to membership.

4) Council approved the HMA Annual Meeting and Arrangements Committee's four recommendations. The meeting is to be held at the Ritz-Carlton Mauna Lani from October 6 to 9. The HMA will continue to allow medical students and resident physicians to register at the door as in past years. The committee will look into extending the hours of the exhibit booths at the annual meeting.

5) Council approved the list of HAMPAC Board members.

6) QUEST.—Council voted to send a letter to Winifred Odo with copies to Governor John Waihee, Winona Rubin and Jack Lewin with questions of concern about the program. If HMA does not receive satisfactory answers to the questions, the HMA will seek a delay in the implementation of the program until the questions have been answered. The Executive Committee and in-house legal counsel will draft an informative letter regarding Health QUEST to the membership so they can make informed choices.

7) To represent HMA on the AMA Advi-



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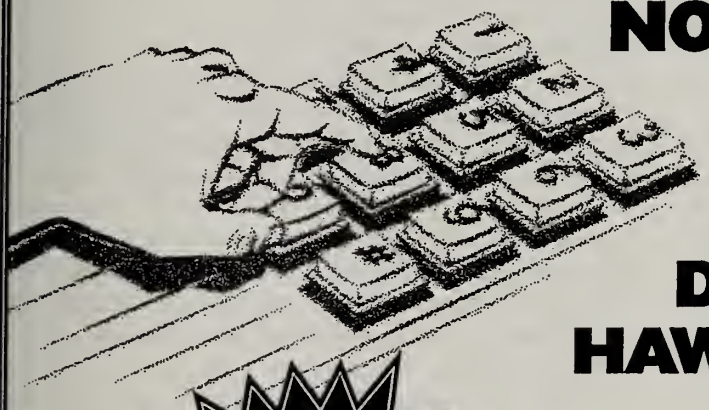
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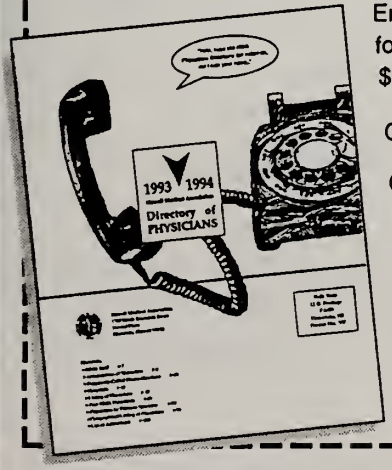
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sory Panel, Council nominated Drs William Iaconetti for Senior Physician, Jeanette Chang for Women in Medicine and Danelo Canete for Minority Physician.

8) Because of budget constraints this year, Council disapproved hosting a party at the AMA meeting in June.

The component societies reported:

Honolulu.—President Leonard Howard reported: 1) He and Mr Won had attended a quarterly staff meeting at Wahiawa General Hospital where Mr Won explained the Peer Review Committee process for handling complaints regarding HMA members versus the RICO process. 2) The chair of the HCMS/HMSA Committee, Dr Eugene Wong, will be meeting with HMSA to set the rules of engagement on how the committee will work. 3) The chair of the Board of Education, Debbie Hartmann, will be meeting with the HCMS regarding the education curriculum to reduce the amount of teen pregnancies. 4) The Health Summit will be held from January 27 to 29, 1995 at the Ilikai Hotel. The purpose of the meeting is to get many leaders of the community together to discuss how medical care should be delivered and how to control costs without reducing the quality of care. 5) Dr Canete will put together information on Compuserve, an electronic bulletin board, and will encourage physicians to use the system.

Hawaii.—Dr Lee-Ching reported there will be a joint symposium with West Hawaii at the Mauna Lani Hotel on August 21. The topic will be state health care reform as it relates specifically to the Big Island and Neighbor Islands.

Maui.—Dr Don reported that Maui County recently enjoyed a whale–watch sailing trip. MIEC will present a seminar on managed care on Maui the week of April 11.

MIEC.—Dr Dang reported that MIEC is investigating a risk retention captive insurance as a way to save money for physicians. The premium tax would be 1% as compared to 4.24%. MIEC is considering a joint application with the HMA which would possibly help increase HMA membership. These ideas are only in the planning stages and Dr Dang will keep Council apprised of any new developments.

CME.—Dr DeMare reported that the ACCME has approved provisional accreditation of the Hawaii Consortium for CME for 2 years; however, a sponsor may not enter into joint-sponsorship with an unaccredited sponsor during this period of provisional accreditation.

Environmental Health Committee.—The Environmental Health Committee's project for 1994 is to study the air in buildings (Sick-building syndrome). The HMA building might be evaluated for quality of clean air by the committee.

FTC Fee Review.—The FTC now is allowing medical societies to require participation in a fee review program as a condition of membership, and it is permissible for medical societies to discipline members who engage in fee gouging. HMA's in-house legal counsel is reviewing the information.

Hawaii Medical Journal .—Dr Shirasu was pleased to report the *Journal* is doing well financially. The ad revenue for the *HMJ* is covering the cost of printing.

Classified Notices

To place a classified notice:

HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.

Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Wanted

Board-eligible Occupational Medicine Physician, well-experienced in injury care, surveillance, consulting, and family practice seeking locum tenens position ASAP. Flexible arrangements. Call collect 215-368-5493.

Office wanted — Honolulu. Industrial injury consultants need use of exam room and minimal staff support 2-5 days/mo. 1-800-325-4338. References.

Rewarding opportunity to practice the full range of family medicine (with obstetrical option if desired) in a long-standing community health center. BC/BE family practitioners needed to join existing staff composed of family physicians, internists and pediatricians on the Waianae coast. Academic positions also available. Full benefits package and competitive salary. If interested, call or send CV to Jim Paraskevas MD or Rio Banner MD, Waianae Coast Comprehensive Health Center, 86-260 Farrington Highway, Waianae HI 96792; (808) 696-7081.

PACE Hawaii at Maluhia, a new and innovative approach in caring for Hawaii's elderly, is seeking a physician, 20 to 40 hours, to join its dynamic team. Experience in geriatric or internal medicine/family practice preferred. Position to be filled immediately. Send resume or call: PACE Director 1027 Hala Drive, Honolulu HI 96817; (808) 832-6114.

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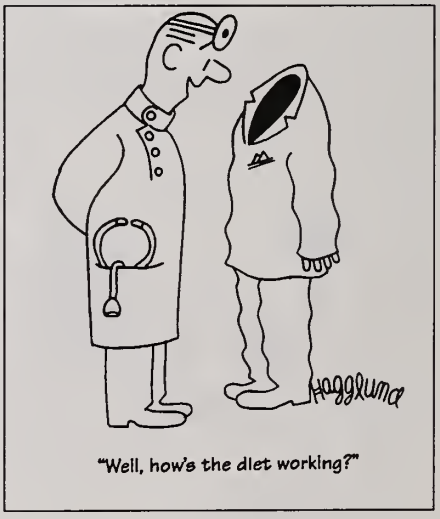
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"Well, how's the diet working?"

➤ *(Continued from Page 158)*

'A'ali'i — Hopseed Bush
This extremely variable plant ranges in size from small shrubs to medium-sized trees. The leaves are used to treat rash, itches and other skin diseases.

'Awa — Kava
This medium-sized shrub is distinguished by stem color and shape, and by leaf size. The root is the part most often used in healing, but sometimes the bark and roots are used. It is used in the treatment of headaches, muscle pain, and to induce sleep. It is also a treatment for general debility, chills, colds and other lung problems, such as bronchitis and asthma.

'Awapuhi — Shampoo Ginger
A deciduous herb which generally grows about two feet tall. Ashes of the leaves are used to treat cuts and sores. The root is used in the treatment of ringworm, sprains and bruises. The root is also used in treatment of headaches, toothaches and stomachaches.

Kalo — Taro
A perennial plant with large, distinctive leaves. The cut raw rootsock is rubbed on wounds to stop bleeding and the cut raw petiole is used to relieve the pain and prevent swelling of insect bites and stings. The corm is used to treat indigestion and as a laxative. The leaves are used in the treatment of asthma.

Ko — Sugarcane
This is a large perennial grass. The sap is commonly used to sweeten herbal preparations and the juice from the shoot is used to treat lacerations.

Mai'a — Banana
These tree- like herbaceous perennials are extremely variable in form and fruit quality. The juice expressed from the roots of certain varieties is used as a medicine for thrush in babies. The fruit is used as a cathartic and to treat general debility and stomach and other internal disorders. Some varieties are used in the treatment of asthma.

Noni — Indian Mulberry
The leaves and bark from this small evergreen tree are prepared as a tonic and used to treat urinary disorders and muscle and joint pain. Either the ripe fruit or the leaves can be used as a poultice for boils, wounds and fractures. A tonic prepared from the immature fruit is used to treat diabetes, high blood pressure and loss of appetite.

'Ohi'a Lehua
This plant, native only to Hawaii, is extremely variable in size and shape, and has a large ecological range. The flower is used to ease childbirth and leaf bud tea is used as a tonic to treat colds.

'Olena — Turmeric
This deciduous member of the ginger family grows from 2 to 4 feet tall. The root is used to treat carache, growths in nostrils and throat discomfort.

Pia — Polynesian Arrowroot
The raw starch from this tuberous plant added with water was used for diarrhea and when mixed with red clay, it was used for dysentery. The starch was also applied to wounds to stop bleeding.

A bibliography of sources in the Hawaii Medical Library on Hawaiian medicinal plants is available on request at the reference desk. Call 536-9302 or Fax 524-6956.

In the future, look for a special issue of the *Journal* on Hawaiian medicine and Hawaiian health. Also look for an announcement of the Hawaii Medical Library garden dedication ceremony.

Norman Goldstein MD, Editor

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News and Notes Henry Yokoyama MD

Professional moves

February: **Thomas McNorton** opened his practice in neurology, neurophysiology and sleep disorders medicine at Kapiolani Medical Center at Pali Momi, Ste 200. OBGyn **Jon Morikawa** opened his office at Kapiolani Medical Center at Pali Momi, Ste 350.

March: Surgeon **Nancy Furumoto** joined **Robert Oishi** MD Inc.'s Surgical Consultants of Hawaii, KMP, Ste 305. Ophthalmologist **Tyrie Lee Hiller** relocated to 1060 Young St, Ste 216.

April: OB **Thomas Oshiro** retired on April 1 and his practice was assumed by **Nathan Fujita** at the Medical Arts Bldg., Ste 304. Allergist **Clarence Sugihara** also announced his retirement as of April 23.

Miscellany

Two psychiatrists talking shop over a cup of coffee. "I have a patient with a split personality," one remarked delightedly. "That's not so uncommon," the other replied. "Yeah, but in this case," the first said with a grin, "they both pay." (From *Playboy Party Jokes*, Jan 1994)

Elected, Appointed and Honored

Our state health director, **Jack Lewin MD**, was one of the recipients of the 1993 AMA Doctor Nathan Davis Award. The award is presented annually to public officials who have made significant contributions to further public health.

Internist **Thomas Au** was named vice president of medical affairs and medical director of the Rehabilitation Hospital of the Pacific.

Ernest Bade MD, Hilo Medical Group physician, was awarded the Hawaii County Medical Society's "Distinguished Physician Award" for 1993.

The Hawaii Ophthalmological Society elected **Jon Portis MD** president; **Rhoads Stevens MD** VP; **Scott Kortvelesy MD** secretary; and **Byron Wong MD** treasurer.

Cardiac surgeon **Richard Mamiya** was elected to the board of First Hawaiian Inc., the parent company of First Hawaiian Bank. Dick has been a board member of First Hawaiian Bank since 1980.

Surgeon **Glenn Kokame MD**, Director of Oncology at KMC from 1982 to 1992, was awarded the Meritorious Achievement Award from the American College of Surgeons for his services to the Commission on Cancer and the Kuakini cancer program. Glenn was nominated by **Scott Hundahl MD**, current Hawaii State Chairman. Another general surgeon, **Mark Mugishi MD**, who coaches the Iolani basketball team, was voted Coach of the Year after Iolani won the state basketball title this year.

Getting Stoned? (Condensed version)

A few weeks after my internship, I was confronted by a timid and deferential couple in their teens. The young woman was having trouble coping with the nausea and vomiting of her early pregnancy. I reassured them this was normal at this stage of pregnancy and that GRAVOL (an anti-nausea med popular in Canada) would greatly reduce her nausea. They appeared more relaxed, and I silently complimented myself on my empathy and skill in communication. As they rose to leave, the husband turned to ask one last question. "Will ordinary road gravel be okay, Doctor?" (**Roger Hoag**, *Stitches*, Nov-Dec 1993)

Conference Notes

Low back pain (LBP) by Franklin Kozin, rheumatologist with Scripps Institute, at the Halekulani Hotel on March 20, 1994 and sponsored by Searle.

Common sense approach to LBP:
- a. Cost-effective diagnosis
- b. Cost-effective therapy
- c. Prevention of disability
- d. Prevention of chronicity

Incidence:
- a. 80% of population in life time
- b. 10% to 30% of population at anytime
- c. Most common disability in 18 to 45 year-old men
- d. Third most common disability in 45 to 60 year-old men and women
- e. Second most common reason for office visits

Neurological levels: L4, L5, S1 levels account for 85% to 95% of sciatica; L2, L3 levels uncommon.

L4: Pain lateral and anterior thigh; diminished knee reflex; sensory changes anterior thigh and lateral leg; weakness tibialis anterior m.

L5: Pain sacroiliac jt, hip and lateral thigh; normal knee and ankle reflexes; sensory changes lateral leg, dorsal foot; weakness dorsiflexion big toe and foot.

S1: Pain buttocks, calf and foot, posterior thigh; diminished ankle reflex; sensory changes lateral heel, foot and 5th toe; weakness plantar flexion of foot.

Time sequence: First 4 weeks: optimal time for therapy—1 to 4 months: 6 months and longer: chronicity.

Statistics: 90% improve (of which 94% recur) 10% see a doctor and 6% are hospitalized (40% recur); 60% are investigated (50% recur); 10% have serious cause of LBP (90% are cured by surgery or medical therapy).

Factors for poor outcome:
- a. Low educational level
- b. Prior episodes of LBP
- c. "Always feels sick"
- d. "Treatment not helpful"

LBP and radiology: LBP involves most x-rays in ambulatory setting; 3 million lumbar x-rays; 1 million spine x-rays (potentially dangerous exposures)

LBP Hx and PE:
- a. Cauda equina syndrome: Surgery
- b. Significant trauma: X-ray LS spine
- c. Positive risk factors: X-rays, lab studies
- d. Others: Conservative care

Cauda equina syndrome: Pain, numbness, weakness, atrophy, paralysis (bladder).

Significant trauma: Fall from height; car accident.

Positive risk factors: Over age 50; systemic factors; corticosteroid use; inflammatory history; alcohol, drug abuse; nocturnal pain; compensation or litigation cases.

Others: Other LBP; referred pain; neuropathic LBP; mechanical LBP

LBP 2° cancer: 0.66% have cancer; age over 50; prior hx of cancer; pain over one month duration; failure of conservative Rx; anemia (Hct less than 36%); elevated ESR: greater than 45 mm.

Types of cancer: Lymphoma; lung cancer; prostate cancer; breast cancer; multiple myeloma; renal cancer.

2% of LBP: Due to malignancy, infection or inflammation

15% of LBP: due to spondylitis

Lab studies: CBC: 12,000 WBC; Hct less than 36%; UA: stone, multiple myeloma; ESR: greater then 50 mm; Antigen B27

◆ Don't do RF and ANA on patients with LBP

History: A. LBP; B. LBP with leg pain (above knee and below knee).

Nonpharmacological therapy

First 10 days:

A. LBP only:
- a. Bed rest 2 days
- b. Heat, ice, massage
- c. Williams' flexion exercises
- d. McKenzie's exercise

B. LBP with leg pain:
- a. Bed rest for 10 to 20 days
- b. Heat, ice, massage
- c. Williams' flexion
- d. Support/corset
- e. Reassess in 10 to 14 days

Second 10 days:

A. LBP only: Heat, ice, massage; exercise

B. LBP with leg pain: Rest 10 to 20 days

Third 10 days: Physical therapy; x-rays and lab studies.

Pharmacological therapy

A. LBP only:
- a. Simple analgesics
- b. NSAIDs
- c. Muscle relaxants
- d. Opiates

B. LBP with leg pain:
- a. Steroids, eg, Decadron LA
- b. Simple analgesics
- c. Opiates (eg, Vicodin)

d. Anxiolytics

Re NSAIDs: Use NSAIDs with long half–life to avoid peaks and valleys and avoid benzodiazepines.

Re surgical outcome: At 6 months, not much difference between surgery and medical therapies.

Differential diagnosis of LBP

1. Viscerogenic
 a. Neurofibromas
 b. Intra-abdominal conditions
 c. Gyn conditions
2. Neurogenic
 a. Neurofibromas
 b. Neurolemmomas
 c. Diabetic neuropathy
3. Psychogenic: Rare
4. Vascular: Abdominal aortic aneurysm; other vascular conditions
5. Spondylitis

Hors de combat

Bob Oishi is the Hawaii principal investigator for the 5-year Tamoxifen trials in women at risk for breast cancer started in 1992. When the report was released that women on Tamoxifen have a 2 to 3-fold risk for uterine cancer, poor Bob was swamped with calls from anxious women and was kept busy reassuring them.

Medical oncologist **Niranjan Rajdev** had the following comments re Arthur Caplan's article: "Tamoxifen: two-edged sword." "It brings to my mind the expression: 'a little knowledge is a dangerous thing.' I believe the article will cause further disservice to many breast cancer patients. Although Tamoxifen is not a wonder-drug, it indeed has shown success in breast cancer therapy and has withstood the test of time."

Miscellany

Q. What comes before phobia?
A. Three beers.
(As told by Psychiatrist **KY Lum**)
Q. Why is diarrhea hereditary?
A. It's often found in jeans.
(Our thanks to orthopod **Rowlin Lichter**)

An American tourist in Madrid stopped at a local restaurant after the bullfights. She asked Julio, the waiter, to recommend a local favorite. Julio retreated to the kitchen and soon emerged with a steaming platter of two grapefruit-sized meatballs toasted a golden brown and highly spiced. She had never tasted anything so crunchy and delicious and savored each morsel. The next day she returned to the restaurant after the bullfights and ordered the same dish. A mournful Julio served her two golf–ball–sized meatballs. "How come?" she asked. "The bull, he sometimes wins," apologized Julio. (As told by **Clay Benham**, our Beretania tennis pro)

Physicians speak up

Dan Canete, President-elect Honolulu County Medical Society commented on **Max Botticelli's** article, *A way to cut medical costs: Accept death*, "Many patients whose prognosis is hopeless overstay in our intensive care units at considerable expense while we try to convince family members to change to no-code status.

Often, no one family member wants to make the decision alone. And their loved one is denied the right to die with dignity, spending the last few days, weeks and months of life hooked up to tubes coming out of every orifice and connected to machines prolonging life unjustly.

If we follow Dr. Boticelli's suggestions, we may be able to save some health dollars that are currently being spent to save our consciences."

Miscellany

A 90-year-old man checked into a posh hotel to celebrate his birthday. As a surprise some friends sent a call girl to his room. When the man answered the door, he saw before him a beautiful young woman. "I have a present for you," she said. "Really?" replied the bewildered gent. "I'm here to offer you super sex," she said in a whisper. "Thanks," he said thoughtfully, "I'll take the soup."

A grasshopper walks into a bar. The bartender looks at him and says, "Hey, they named a drink after you!" "Really?" replies the grasshopper, "There's a drink named Stan?"

(From "Laughter, the Best Medicine," *Reader's Digest*, March 1994.)

Conference notes

ADA President James Gavin spoke on "Diabetes and Diabetic Complications" on March 10 at the Hawaii Prince. Herein are some pertinent notes:

This is the *Era of Diabetic Complications:* Eye: 25 X normal; Renal: 17 X; Heart: 2 X; Amputations: 5 X; CVAs: 6 X.

Dilemma of diabetes: Controlling DM is difficult for provider and for patients. Patients who have taken good care still get complications. Can complications be prevented?

Glucose hypothesis: Can normalizing glucose levels prevent or delay complications? Rate of microvascular complications is similar for all diabetic complications.

DCCT (Diabetes Control and Complications Trial): To determine the relation of metabolic control and the clinical course of vascular complications in IDDM. Thesis: Blood glucose is the primary control.

A. Conventional therapy
 • 1 or 2 injections daily
 • Daily self monitoring
 • Quarterly HBAlc
 • Diet and exercise education
 • Quarterly clinic visits

B. Intensive therapy
 • 3 or more daily injections or insulin pump
 • 4 or more blood glucose monitoring daily
 • Hospitalize to initiate therapy
 • Frequent educational sessions
 • Monthly clinic visits

Glycemic results

HBAlc (6.05% = upper limit of normal)
Intensive therapy: 7.0 to 7.2%
Conventional Therapy: 8.9%

Average blood sugar:
Intensive therapy: 155
Conventional therapy: 231

Conclusions: Retinopathy has a linear relation with mean HBAlc

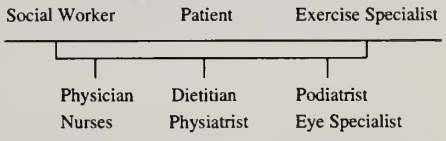
Nephropathy: 39% reduction in microalbuminuria and 54% reduction in clinical grade albuminuria.

Neuropathy: Less with intensive therapy.

DCCT results:
a. New expectations of outcome
b. New expectations of care
c. New standards of care

New theme for diabetes control:
a. Team approach: "The impact of the whole is greater than the sum of the parts."
b. Shift in responsibility of care
c. Education is the core of good manage ment
d. Outcome from appropriate therapy is no longer in doubt.

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The Weathervane

Russell T. Stodd MD

Propaganda is the art of persuading others to believe what one does not believe oneself.

Repeatedly, the people of America are told by Ira Magaziner, administration *health planners*, by Congressional spokespersons, and by the liberal media, that alliances will bargain with HMOs for medical care, and we will all live happily ever after. "Money will be saved, patients will be delighted, quality medical care will be assured." Yet, repeated studies have shown these are untruths, misrepresentations, deceptions—in fact—whoppers. "Despite increased reliance on managed care plans to control costs, almost no evidence exists to support the view that these plans reduce health insurance premiums and total costs." (Center for Health Policy Research)

Fact.—In HMOs patients are less happy, they have greater difficulty being seen in a timely manner, they frequently cannot see the doctor of their choice, and quality assurance is as nebulous as any milieu.

Fact.—In fee for service, repeated studies have shown that patients prefer to select their own doctor, they are able to see the doctor sooner, and find greater satisfaction with fee for service.

Fact.—HCFA's own studies reveal that HMOs cost 5.6% more than the identical services under fee for service. One can only wonder what forces drive planners to ignore their own data and continue to plan, predict and push for the death of fee-for-service.

It is better to be going down the drain than coming up it.

The American Society of Cataract and Refractive Surgery—code name, ASCRS (We could use a more euphonious acronym!), conducted a survey of 3,000 members on health care reform; 40% responded. Not surprisingly, 62% have had to reduce staff pay in response to Medicare reductions and other system changes. Forty percent of respondents have changed their service methods, 36% have reduced the size of office staffs, and 36% have had to increase their office hours to make ends meet. Try to smile—tomorrow will be worse when managed care arrives.

Ye shall know the truth, and the truth shall make you mad.

Peer review proceedings are confidential, the legislature promised, right? Well, yes, but maybe not. In Nevada a plaintiff's attorney obtained a copy of a quality assurance report in which an anesthesiologist was said to have used *very poor* judgment. The spouse of the deceased patient sued, and the Q-A report was submitted as evidence. The defendant's attorney asked to have the report thrown out, citing a Nevada law protecting peer review records. However, the court allowed the report, stating that the law was intended to protect such material from compulsory discovery and did not address material acquired outside discovery proceedings. In other words, if a medical document is leaked or stolen, it can be used as evidence.

A beam of daylight in the political quagmire.

Arizona Governor Symington signed the bill allowing residents to create a savings account sheltered from state income taxes for the purpose of paying for medical treatment. Four states now have signed onto the only medical *reform* plan that makes sense, one that allows people to directly control costs and selection of physician. Could such a radical idea possibly spill over to Washington?

Such is the human race, often it seems a pity that Noah did not miss the boat.

With the financial squeeze on those providing medical care, but the expenditures continuing to escalate, where is the money going?

Answer—those in the middle, our enlarging third parties, which are increasing in a bureaucratic frenzy. (It's managed care, stupid!) According to a respected medical economist, Princeton Professor Uwe Reinhardt, the medical insurance carriers harvested unscrupulous profits for 1993, including one CEO who received $20 million in compensation. Right here in our modest state legislature, according to the State Ethics Commission, insurance representatives spent $188,029 in lobbying efforts, a total topped only by Sukamto Holding Corp. (And, shall we build a convention center?)

Good terminology is half the game.

In a remarkable display of creativity, some of those who fail to file their tax returns, or file late, have come up with an illness, *Failure to file syndrome*. This is true! In some cases in New York, it is actually being used as a legal defense. Attorney Elliot Silverman, a tax lawyer, and Stephen Coleman MD, a New York University psychiatry professor, recently wrote an article on the syndrome for the *New York Law Journal*. Supposedly, a number of those who exhibit the illness are "highly respected, competent attorneys at the top of their profession." The statement was made that the perpetrators have an aversion to filling out forms, and an overall inability to act in one's own interest. Does this mean that the rest of us like to fill out forms?

More on the "success" of the Canadian medical system.

To the north, Ontario has found a way to reduce the provincial budget by $2 billion: 1) All social service employees will take time off without pay for each of the next 3 years. 2) Physician reimbursement will be reduced 4.8%. 3) Hospitals will reduce the number of elective operations. 4) The ministry of health will pare the medical services provided by the heatlh insurance program, and a commission will review and recommend what are *non-essential* services.

Addenda

▲ Anyone who thinks the government can manage America's annual $900-billion health care industry (larger than the entire economy of France) must have failed to note the 75 year rise and fall of Soviet state socialism.

▲ My loathings are simple: Stupidity, oppression, crime, cruelty, country music.

Aloha and keep the faith.

rts

■



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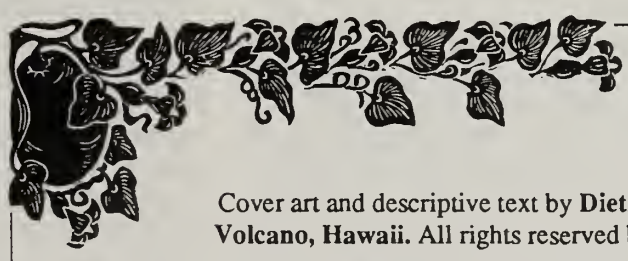
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The Fleeing of Hina

There is a particular type of sweet potato named *hau-lani* meaning seed of heaven. A very earthly story familiar to all mothers gives this plant its name.

The goddess Hina once gave birth to some imbecilic children who constantly made excrement. The disposal of excrement involved many strict rules and observances in Hawaiian society. Hina's husband insisted she laboriously follow all the unpleasant rules in disposing of the children's mess.

Tired, weary and disgusted with it all, Hina decided to abandon her household and flee to the serenity of the moon. Her panicked husband lunged up trying to stop her flight; he caught one of her legs, but it broke off in his hands as Hina escaped.

The *hau-lani* sweet potato is named for that broken off piece of the fleeing Hina; sweet potatoes are planted by pieces taken from a mother plant.

Editorial Norman Goldstein MD

Cancers in Gray Hawaiians

The lead article in this issue of the *Journal* deals with the increasing incidence of cancers in Hawaii's aging population.

The U. S. Bureau of the Census predicts that over the next 80 years the number of people 65 years of age or older will increase four and a half times that of people under the age of 65.

Nomura, Goodman, Kolonel and Fu found that melanoma topped the list of the most rapidly increasing cancers among men and women 65 and older. In the years 1973 to 1977, the average annual increase of melanomas in men was 17.2 and women 5.5; in the years 1983 to 1986, the annual incidence for men was 53.1 and women 23.8; the percentage of increase for men was 209% and women 331%!

As our population grays, we are getting more cumulative years of sun exposures—with the inevitable liver spots, wrinkles, skin cancers and melanomas. Readers may want to review the special report on "Practice Safe Sun-Hawaii" in the May 1993 issue of the *Journal*.

The Cancer Research Center of Hawaii, led by Brian Issell MD, and the Epidemiology Program are to be congratulated for the excellent work they are doing in gathering a mass of very important data. *Mahalo* to the authors and the many cooperating physicians, clinics and hospitals in our state.

Norman Goldstein MD, Editor

Hurricanes in Hawaii

This is hurricane season in paradise. The book on *Hurricane Iniki* reviewed by John Hoover should make the reader go out to the nearest book store today. Authored by Jim Borg, the book is a must for every home in Hawaii. Borg, a science writer for *The Honolulu Advertiser*, *Time* and the *San Francisco Examiner*, is a well-known, award-winning author, recipient of the HMA Distinguished Medical Reporting Award and is married to TV newscaster Ann Botticelli.

Last month's *Journal* contained an article on the "Psychological Response to Disaster: Implications for Hawaii" by Godleski, Luke and DiPreta of the University of Hawaii Department of Psychiatry.

Our general population now is somewhat more prepared for natural and man-made disasters, but many physicians are not. They also should be knowledgeable of the psychological and other effects of hurricanes in Hawaii.

If you have not had the opportunity to read the paper by Godleski and her associates, you really should.

Norman Goldstein MD, Editor

Book Review

Hurricane Iniki

Edited by Jim Borg. Honolulu Advertiser *and Mutual Publishing Company, Honolulu, HI. $12.95, 95 pages. ISBN 1-56647-002-6*

On the afternoon of September 11, 1992, with little advance warning, Hurricane Iniki struck the island of Kauai with record-breaking winds up to 175 miles an hour. Iniki tore into the heart of the island, destroying hotels, homes and commercial buildings, toppling trees and shredding the leaves off those that remained. Enormous waves swept ashore, piling cars up like driftwood. As the introduction to this book states, "When the sun rose on September 12, the old Kauai was gone." Almost miraculously, however, only three Kauai residents lost their lives and the outpouring of aloha that followed the disaster has become legendary.

Hurricane Iniki chronicles this amazing story from September 8, 1992 (two days before Iniki hit) until October 9, a month later. The book consists primarily of reports from the *Honolulu Advertiser*, including virtually every hurricane-related story published by the *Advertiser* during that period. Events on Kauai, of course, take center stage, but other islands are included too. The original newspaper reports have been enriched by additional color photographs (many full or half page), a two-page summary of events, a list of news stories in Mainland papers, and two Dick Adair cartoons. The back cover presents safety tips on how to ride out a hurricane.

This is clearly the best single source of general information on Hurricane Iniki: Human interest stories share space with tableaus of destruction, meteorological explanations and sober economic assessments. A quick look at the University of Hawaii's on-line library catalog reveals no other single book that compares. Although the same information (minus some of the arresting photographs) could be pieced together from the newspapers themselves, the time and effort would be wasted when such a handy compilation can be had for a very reasonable $12.95. The book might have been even more valuable had it included stories from other island publications, but it is complete enough as it stands. Printed on quality glossy paper and with good color, it makes both a pleasing and informative souvenir for those who lived through this key event in the history of 20th century Hawaii, and a valuable resource for scholars in years to come.

Reviewed by John Hoover

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Medical School Hotline

John A. Burns School of Medicine
Nadhipuram V. Bhagavan PhD
Professor and Chair
Department of Biochemistry and Biophysics

The Department of Biochemistry and Biophysics, as an integral part of the University of Hawaii John A. Burns School of Medicine, is located in the Biomedical Sciences Building and Snyder Hall on the Manoa campus.

The curriculum in biochemistry and biophysics at the University of Hawaii began with the arrival in 1959 of Dr Kerry Yasunobu from the University of Washington, Seattle, who joined as a faculty member of the Chemistry Department. In 1963, Dr Theodore Winnick organized and developed an independent and separate Department of Biochemistry. The department was then transferred from the graduate school to the school of medicine. The MS and PhD programs in biophysics were added in 1967.

The change and growth of the department since 1962 has been rapid and exciting. It is evident that it will continue as a broadly based interdisciplinary department, representing many interests and facets of contemporary biochemistry and biophysics.

The current staff of 12 graduate and six cooperating faculty is actively pursuing a variety of research projects such as molecular basis of enzymology, several aspects of protein-protein dynamics, protein-nucleic acid interactions, carcinogenesis, bioenergetics, neuro-biochemistry, molecular endocrinology, molecular biology, phagocytosis, and pulmonary surfactant. Some of the research activities underway are: the structure and function of rhodanese, the mechanism of leukocyte phagocytic activity, molecular biology of relaxin, regulation of RNA polymerase, serotonin receptors in the central nervous system, molecular mechanism of Na^+, K^+-ATPase, GTP-binding proteins, iron metabolism, isolation of drugs from Hawaiian plants, pulmonary surfactants and respiratory distress syndrome, and thyroxine-binding albumin. Publications have totaled over 1,000 since the inception of the department.

The department fulfills its teaching responsibilities by actively participating in the medical school curriculum as well as teaching undergraduate and graduate level courses.

Since 1962, 79 PhD candidates and 77 MS candidates have completed their training and are now pursuing professional careers in academia and in industry.

Currently, 24 students are enrolled in the PhD program. The faculty continually seeks extramural support for graduate research and several have funded research grants.

With the introduction of the problem-based MD curriculum in 1989, the traditional lecture mode of instruction in biochemistry for medical students has been changed to innovative methods of teaching the discipline. The students learn biochemistry within the context of case presentations. For example, during the case discussion of diabetes mellitus, the metabolism of carbohydrates, lipids and proteins are discussed. Similarly, during the case discussion of thalassemia, the structure and function of hemoglobin is explored. The department offers one credit electives suited either for enrichment or remediation. The faculty is excited with the possibility of instructing medical students all four years in medical school.

Our goal is to perform with excellence in all of the three areas of academic endeavor, namely medical, graduate and undergraduate education. The part and parcel of our activities is deeply embedded in pursuing an active research in the biomedical field.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Persian Gulf Illness Evaluation Program

In August of 1990 U.S. servicemen and women were deployed to the Persian Gulf region to participate in Operation Desert Shield. The Iraqi invasion of Kuwait ensued and Kuwait was liberated in the multinational Operation Desert Storm. Almost 700,000 American troops were deployed to the region during these two military actions.

Combat casualties were low, and medical illnesses associated with these operations did not significantly impair the strength of the fighting force. We learned that some soldiers developed hyperreactive airways when exposed to intense smoke inhalation. A few soldiers developed a unique syndrome of viscerotropic leishmaniasis following exposure to *Leishmania tropica*. A moratorium on blood donation from Persian Gulf veterans was lifted in January of 1993 after concerns about transmission of infectious agents were resolved.

A cohort of soldiers who are Persian Gulf veterans have developed illnesses that have remained unexplained, and may be related to the Persian Gulf experience. A Department of Defense registry has identified more than 300 people who have unexplained illness as of May 31, 1994 and who were deployed to the Persian Gulf. The Department of Veterans Affairs has identified approximately 1,000 similar patients. To date the nature of the "Persian Gulf Illness" remains poorly defined. Multiple clinical syndromes involving musculoskeletal, neurologic, psychiatric, gastrointestinal, and other organ systems have been reported to physicians.

The DOD is embarking on a mission to provide comprehensive medical evaluation for all beneficiaries who are experiencing illnesses that could be related to the Persian Gulf War. This initiative will be called the DOD Persian Gulf Illness Comprehensive Clinical Evaluation Program. Clinical evaluations will commence on June 15, 1994; patients will be evaluated at local medical facilities using comprehensive protocols and referred to regional medical centers if a definitive diagnosis that can ex-

plain the patient's complaints and Persian Gulf-related health concerns is lacking.

Regional medical centers of the Army, Navy and Air Force will complete Phase 2 and 3 evaluations of patients with inpatient, multispecialty, comprehensive evaluation protocols. The initial program hopes to define the scope of the problem and provide evaluation and treatment for all soldiers (Active duty, reserve, national guard, retired) with Persian Gulf war-related health problems. All eligible patients will be expediently evaluated and an initial report is expected within three to six months.

Tripler Army Medical Center, as the regional medical center, will perform evaluations for patients in the Pacific Basin. We hope that the program will help define the pathophysiologic basis of each individual's illness and allow rational therapy to follow. The data collection process could allow identification of potential causative factors or unifying diagnoses associated with military service in the Persian Gulf.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

HMA Council Highlights

The HMA Council meeting on May 6, 1994 was called to order at 5:30 pm by President Andrew Don. Members present were: Drs A. Don, President; F. Holschuh, J. Spangler, J. Chang, C. Kam, R. Stodd, A. Kunimoto, L. Howard, P. Blanchette, E. Bade, R. Goodale, T. Smith, B. Shitamoto, H.K.W. Chinn, P. Chinn, W. Dang Jr, R. Hollison, R. Kimura, K. Thorburn, C. Wong, J. Betwee, H. Percy, C. Kadooka, A. Bairos, W. Chang, W. Dang, G. Goto, J. Lumeng, S. Wallach, Resident delegate M. Montoya, Alliance members Michelle Min and Susan Wong, and guest Dr E. Montell. Staff: J. Won, B. Kendro, N. Jones, L. Tong, J. Asato, J. Estioko, P. Kawamoto, and A. Rogness, recording secretary.

Dr Don gave an updated report on QUEST and HMA's involvement in meetings (one with the Governor), a letter sent to Ms Winifred Odo stating physicians' concerns, and information on the program sent to members. Dr Don stated that the implementation of QUEST has been delayed until August 1, and no further extensions will be given.

The Governor was very receptive to physician concerns and will be setting up a task force to review the project. The HMA officers also met with Marvin Hall and Bernard Ho of HMSA regarding the Hawaii QUEST contract. The only fee-for-service plan of the five Medical QUEST plans, HMSA is willing to work with physicians. MIEC-insured physicians will continue to have liability coverage under the QUEST plans.

Mrs Min reported that the Alliance has been very busy this year and a binder with their accomplishments was shared with the physicians at Council.

Actions

1) Council approved HMA's continued financial support of the Play-It-Safe Program in 1994.

2) Council voted to send a letter to the Governor asking him to veto SB 1249 relating to nurse prescriptive authority. Council also voted to publicize HMA's comments regarding SB 1249 to the public noting the need for physician supervision to protect public safety. The form of media used is to be determined by the HMA Executive Committee.

The component societies reported:

Honolulu.—President Leonard Howard reported that the chair of the planning committee for the Health Summit conference is Clint Churchill. The planning committee will develop five task forces on the recommendations from the Blue Ribbon Panel report. The Summit will be held on January 27 to 29, 1995 at the Ilikai Hotel.

Hawaii.—Dr E. Bade reported that their County Society had a meeting on April 28. The topic was diabetes and the speaker was Dr S.Y. Tan.

Maui.—Dr B. Shitamoto reported that Dr Julia Frohlich will speak to their county society on May 24. There also will be an Alzheimer's meeting in June.

West Hawaii.—Dr Smith, President reported that the five QUEST health care plans will be invited to speak at the next county meeting.

For Information

Legislative Issues.—Dr Wallach reported that the smoking bill passed and is awaiting the Governor's signature. The bill would amend smoking in the work place statutes and provides a moratorium on county ordinances regarding smoking in restaurants, bars and cabarets. A status list of the other bills was distributed at the meeting.

Survey on Managed Care.—After discussion it was agreed that the Executive Committee would develop an HMA white paper on managed care and that the survey could be based on the white paper. A statement can then be presented to the House of Delegates meeting in October in the form of a resolution. Dr Kam will bring back information to share with Council on primary care and gate-keepers from the AMA meeting in June.

HCCME.—Mr Won informed Council that he spoke with Richard Tishler, the Director of Accreditation and Recognition, ACCME regarding the HMA annual scientific session. Tishler has ruled that the official, listed sponsor must be the organization that applied and was accredited, which in Hawaii at this time, is the Hawaii Consortium for CME. This means that HMA is handling all arrangements for the scientific sessions; however, the program will be titled differently to reflect the Hawaii Consortium for CME.

Bylaws.—The bylaws will be reviewed by the HMA Executive Committee 90 days prior to the annual meeting and it will advise the Bylaws Committee.

HMA President's Message Andrew Don MD

The AMA Annual House of Delegates meeting held in Chicago on June 12 to 15 continues to support the Board of Trustee's basic strategy by neither endorsing nor opposing any plan from Washington DC—but keeping the *patients* at the center of reform and assuring the physician's best judgment will determine the needed care. Given the flexibility with nonpartisan neutrality, no door has been closed to the AMA in Washington DC as legislators finalize the debate and formulate legislation for health system reforms.

One essential point AMA has maintained is to put the patient first, thus creating the Patient Protection Act. The act is attracting bipartisan support in both the U.S. House and Senate.

The Patient Protection Act provides safeguards that assure patients and their physicians are in control of the care given—not insurance companies. Patients would be entitled to the following information from any managed care plan: Up-front, plain-language information would be disclosed to plan enrollees regarding coverage provisions and exclusions, prior authorization and financial incentives for doctors to withhold care, reports on the plan's financial stability and the level of satisfaction of enrolled members.

Patient choice would be protected by requiring that they have the choice of a managed care, indemnity or benefit payment schedule plan. Managed care plans would have to provide a point-of-service option to enrollees.

Credentialing of plan physicians would be based on quality standards; credentialing standards would be disclosed. All physicians would be eligible to apply and if accepted into the plan, physicians could not be terminated without cause.

Managed care plans that did not comply with these basic elements would risk losing their certification to do business.

Opponents to the plan are especially upset by the prospect of having to sign and keep physicians based on quality, not economic standards.

These safeguards must be written into the reforms. Again, a national grass-roots campaign is underway and AMA needs your support to contact every member of Congress to support the Patient Protection Act. You can help by writing to your senators and representatives in Washington. The names and addresses of Hawaii's congressional delegation are:

The Honorable Daniel K. Akaka
United States Senate
Fax (202) 224-2126

The Honorable Neil Abercrombie
U. S. House of Representatives
Fax (202) 225-4580

The Honorable Daniel Inouye
United States Senate
Fax (202) 224-6747

The Honorable Patsy T. Mink
U.S. House of Representatives
Fax (202) 225-4987

In addition to writing a personal letter or meeting with your Senators and Representative, AMA members can contact their congressional delegation quickly by sending a Western Union message to each of them. Call 1-800-354-9292. Your cost to send a message is $8.25.

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Vanda Gill
Honolulu, Hawaii



Wilfredo Salvador
Honolulu, Hawaii

The Rise of Cancer Among the Elderly in Hawaii

Abraham M.Y. Nomura MD, Marc T. Goodman PhD, Laurence N. Kolonel MD, Terri Fu BA

The purpose of this study was to determine if time trends in cancer incidence among the elderly in Hawaii were similar to the trends observed in the mainland United States and to determine if the trends were comparable among the various ethnic groups living in Hawaii. Average annual incidence rates per 100,000 persons, age 65 or older, were determined by sex and ethnicity for the time periods 1973 to 1977 and 1983 to 1986 through the Hawaii Tumor Registry, a population-based central cancer registry. The incidence of all cancers combined increased 27% among men and 26% among women between the 2 time periods. Similar to the rest of the United States, melanoma and cancers of the brain, lung, colon, breast and prostate have risen substantially among elderly Hawaii residents. Comparisons across ethnic groups revealed that melanoma increased mainly among Caucasians, lung cancer increased primarily among Hawaiians and Caucasians, and colon cancer increased in all ethnic groups.

Introduction

The elderly population in the United States is growing rapidly. Over the next 60 years it is estimated that the number of persons 65 years of age or older will increase 4 1/2 times faster than that of persons under age 65.[1] One of the main health concerns of the elderly is the occurrence of cancer. More than 50% of the patients diagnosed with cancer in the United States are age 65 or older, even though this age group constitutes only 12% of the population.[2]

Recent studies have indicated that cancer rates are rising among the elderly in the United States.[1-5] Cancers that are contributing to this increase include melanoma, multiple myeloma, cancers of the brain, lung, colon, and prostate. We had the opportunity in Hawaii to study the time trends in cancer incidence rates among the elderly through the existence of a long-standing cancer registry. This analysis was conducted to see if the cancer trends among the Hawaii elderly were similar to the trends in the rest of the United States and to determine if the trends were comparable among the major ethnic groups in Hawaii.

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Supported in part by Grant PO1 CA 33619 and Contract NO1 CN05223 from the National Cancer Institute, National Institutes of Health, DHHS, Bethesda, MD.

Methods

The Hawaii Tumor Registry (HTR) is a population-based cancer registry for the entire state; it was the principal source of data for this investigation. This registry has been in operation since 1960 and has been a participant in the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) program since its inception in 1973.[6] Patients were identified by the medical records and admissions departments of hospitals, pathology laboratories and clinics throughout Hawaii. Only patients with a known date of birth who were residents of Hawaii were included in this analysis.

The quality and completeness of the data were ensured through the re-abstraction of a sample of the medical records from each hospital, and by extensive edit and logic checks built into the computer software to evaluate the consistency and validity of the responses. There also have been annual audits of the Hawaii Tumor Registry by the National Cancer Institute's SEER staff to inspect abstracting, coding, and case-finding procedures.

Ethnic classification was self-reported at the time of hospitalization. Individuals were assigned to one of the following ethnic categories: Caucasian, Chinese, Filipino, Hawaiian, Japanese or other. Patients with mixed ethnicity who claimed partial Hawaiian ancestry were classified as Hawaiian. Mixtures of other ethnic groups and persons classified as "other" were not included in the study; they constituted only 4.6% of the cases identified by the HTR.

The primary site of cancer was assigned by the HTR according to the International Classification of Diseases for Oncology (ICDO) adopted in 1976 by the World Health Organization.[7]

To determine the incidence rates for newly diagnosed cases during the 1973 to 1977 and 1983 to 1986 time periods, the 1980 census population based on age, sex and ethnicity was used. Age-adjusted incidence rates were computed by the direct method using the 1970 United States Standard Population according to 5-year age groups.[8]

Results

Table 1 presents the 10 most rapidly increasing cancers among men aged 65 and older from 1973 to 1977 and 1983 to 1986 for all 5 ethnic groups combined. The largest percentage of increase in incidence was for melanoma with a gain of 209% between the 2 time periods. The next highest increase was for brain cancer, followed by thyroid cancer, colon cancer, multiple myeloma and lung cancer. Interestingly, the 3 most common cancers among elderly men (prostate, lung and colon) were included

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Table 1

Ten cancer sites with the greatest percent increase in incidence rates from 1973-77 to 1983-86 among men age 65 and older.

	Average annual incidence rate per 100,000				
Site	1973-77	No of cases	1983-86	No of cases	Percent increase
Melanoma	17.2	(26)	53.1	(97)	209
Brain and other nervous system	5.3	(9)	10.7	(20)	101
Thyroid	6.0	(9)	9.3	(18)	55
Colon	171.6	(245)	265.4	(476)	55
Multiple myeloma	15.9	(23)	22.0	(40)	39
Lung	212.7	(311)	273.1	(545)	38
Prostate	362.7	(494)	491.1	(860)	35
Urinary bladder	90.3	(125)	117.2	(205)	30
Rectum	102.4	(148)	126.1	(231)	23
Kidney and renal pelvis	25.1	(37)	30.2	(56)	21
TOTAL CANCER	1520.0	(2155)	1934.5	(3473)	27

among the 10 cancers listed in Table 1. For all cancer sites combined, the average annual incidence rate increased by 27% between the 2 time periods.

As shown in Table 2, melanoma also had the largest percentage of increase in incidence among women aged 65 and older, followed by cancer of the liver, ovary and brain. As with men, the 3 most commonly diagnosed cancers in elderly women (breast, colon and lung) also were included among the 10 cancers listed in Table 2. There was a 26% increase in total cancer incidence between the 2 time periods among the women.

Table 2

Ten cancer sites with the greatest percent increase in incidence rates from 1973-77 to 1983-86 among women age 65 and older.

	Average annual incidence rate per 100,000				
Site	1973-77	No of cases	1983-86	No of cases	Percent increase
Melanoma	5.5	(8)	23.8	(47)	331
Liver	7.5	(11)	15.2	(28)	103
Ovary	19.4	(27)	35.9	(70)	96
Brain and other nervous system	5.4	(8)	10.3	(20)	89
Larynx	3.4	(5)	5.7	(11)	68
Colon	119.3	(174)	187.7	(360)	57
Breast	213.7	(313)	328.5	(633)	54
Lung	86.0	(126)	120.1	(231)	40
Kidney and renal pelvis	12.9	(19)	17.7	(34)	37
Multiple myeloma	13.6	(20)	17.3	(33)	27
TOTAL CANCER	989.6	(1442)	1250.3	(2406)	26

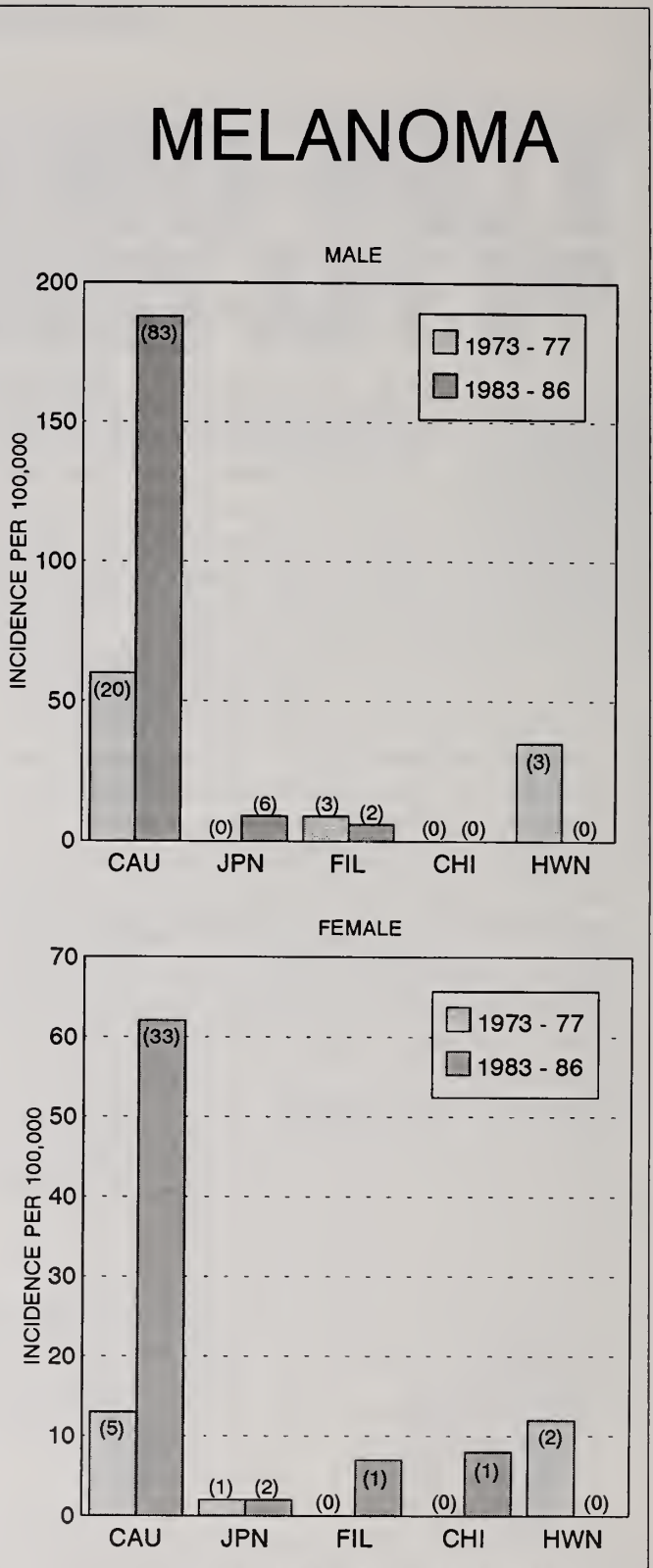


Fig 1. - Average annual incidence rates per 100,000 of melanoma by sex and ethnicity for the time period 1973-77 and 1983-86. Number of cases is in parenthesis.

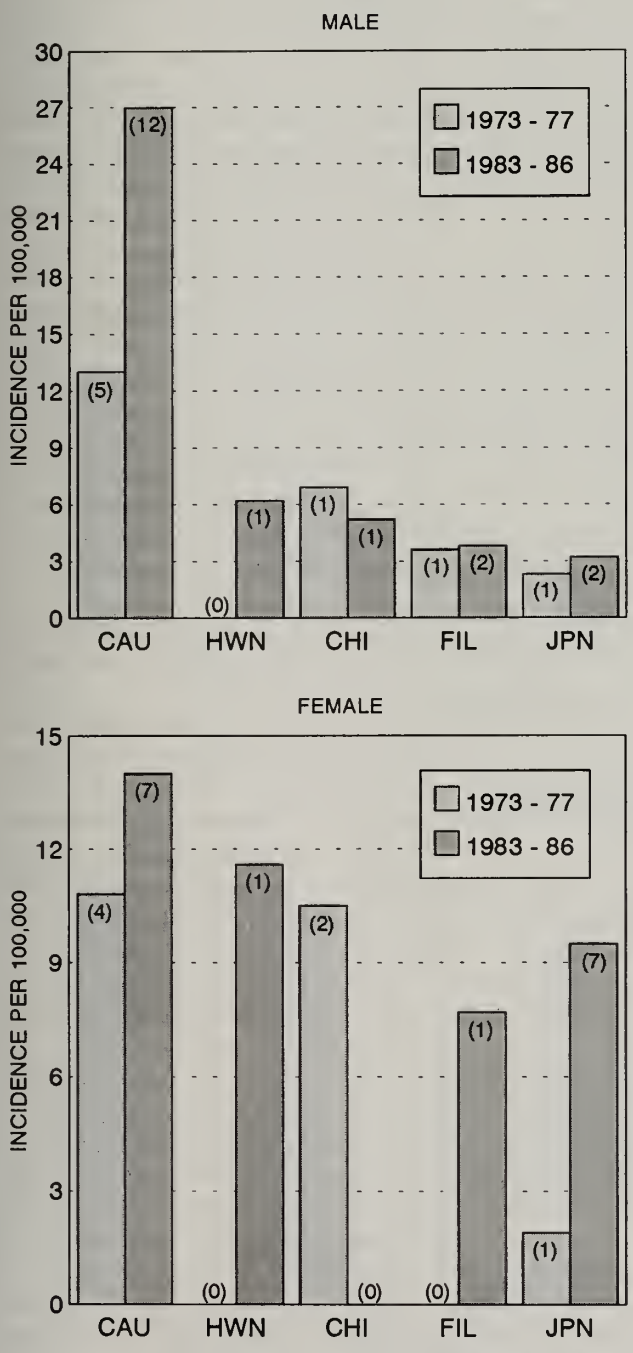


Fig 2. - Average annual incidence rates per 100,000 of brain and central nervous system cancer by sex and ethnicity for the time period 1973-77 and 1983-86. Number of cases is in parenthesis.

Fig 1 presents the average annual incidence rates for melanoma by sex and ethnicity for the time periods 1973 to 1977 and 1983 to 1986. The rise in melanoma incidence occurred mainly among Caucasians who experienced more than a twofold rise in melanoma rates between the 2 time periods. There were too few cases of melanoma in the other ethnic groups (14 in men and 7 in women) to investigate changes in risk with time.

Brain and other nervous system cancers were higher among Caucasian men and women than among the other ethnic groups (Fig 2), but the relatively small number of cases made the ethnic-specific rates unstable.

Lung cancer incidence rates increased most rapidly among Hawaiian and Caucasian men and women, with smaller increases observed among the Japanese (Fig 3). Chinese men and Filipino women experienced a decline in incidence rates between the 2 time periods.

Colon cancer incidence increased substantially among elderly men and women in all ethnic groups, although the increase among Filipino men was a modest one (Fig 4). The rates of colon cancer were highest among Caucasians and lowest among Hawaiians and Filipinos. However, the percent increase from 1973 to 1977 and 1983 to 1986 was greatest among Hawaiian men (151%) and Hawaiian women (69%).

The prostate cancer rates rose for all ethnic groups. The percent increase was 44% for Japanese (from 285 to 409 cases per 100,000 per year), 36% for Filipino (from 331 to 449), 17% for Hawaiian (from 381 to 445), 15% for Caucasian (from 599 to 690) and 3% for Chinese men (from 396 to 407). Prostate cancer incidence among Caucasians was at least 50% greater than that among Filipinos who have the next highest incidence during the 1983 to 1986 time period.

Breast cancer among elderly women increased among all ethnic groups except Filipinos, whose rates have actually declined between the two time periods. The percent increase was 137% for Japanese (from 114 to 270 cases per 100,000 per year), 68% for Chinese (from 184 to 310), 34% for Hawaiian (from 341 to 456) and 5% for Caucasian women (from 449 to 472). The percent decrease was 28% for Filipino women (from 116 to 83 cases per 100,000 per year).

No discernible ethnic differences in incidence trends emerged for the other cancers such as multiple myeloma and cancers of the liver, larynx, thyroid, rectum, bladder, kidney and pelvis. There was an increase in incidence for cancer of the ovary in all ethnic groups from 1973 to 1977 and 1983 to 1986.

Discussion

There was a similar increase in the incidence of all cancers from 1973 to 1977 and 1983 to 1986 among elderly men (27% increase) and women (26% increase). The cancers with the highest percent increase among the men in Hawaii included melanoma, multiple myeloma and cancers of the brain, thyroid, colon, lung and prostate. With the exception of thyroid cancer, the risk for developing these cancers also has increased substantially in other parts of the United States.[3,4] Among elderly women, the incidence of melanoma and cancers of the liver, ovary, brain, larynx, colon and breast increased substantially in

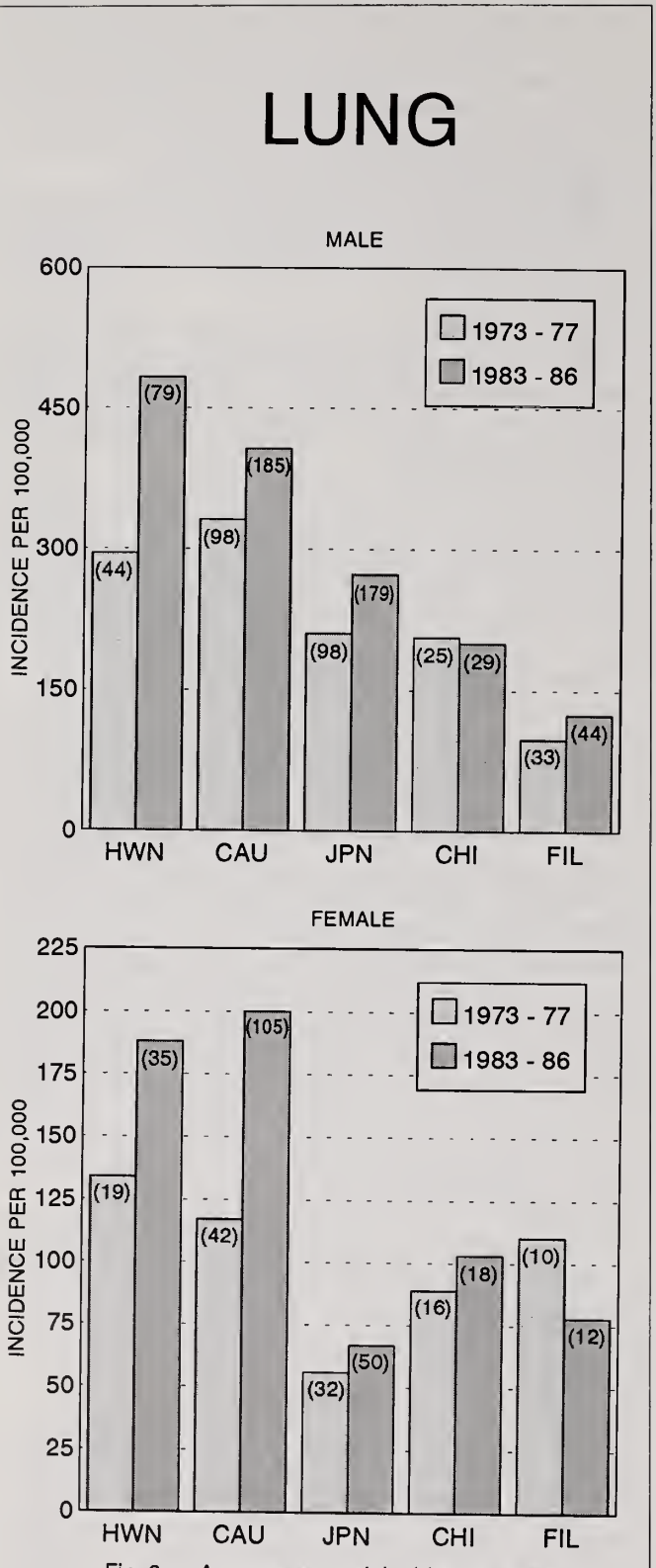


Fig 3. - Average annual incidence rates per 100,000 of lung cancer by sex and ethnicity for the time period 1973-77 and 1983-86. Number of cases is in parenthesis.

Hawaii during the 14 years of observation. This pattern was similar to that reported for other parts of the United States.[3,4]

Melanoma.—Caucasian men and women in Hawaii have experienced a rapid rise in the incidence of malignant melanoma. National data also have shown a dramatic increase in melanoma incidence among elderly whites.[4] Melanoma is uncommon among the other Hawaii ethnic groups and remained so during the period of this study. Tumor registry data from other geographic areas besides the United States also indicate that the incidence of melanoma is low among the Chinese, Japanese and Polynesians.[9] Past studies have convincingly shown that whites are susceptible to developing melanoma and that the presence of nevi, freckling tendency, tropical residence and history of severe sunburns contribute to the risk of being diagnosed with melanoma.[10,11]

Brain and Other Nervous System Cancers.—The incidence of brain and other nervous system cancers increased substantially among elderly men and women between 1973 to 1977 and 1983 to 1986. The rates for these cancers were highest among whites of both sexes. Nationally, there has been a significant increase in brain cancer rates among the elderly.[3] A number of exposure factors including trauma, radiation, viruses, chemicals, smoking, alcohol, lead exposure, maternal oral contraceptive use, and maternal smoking history have been studied in relation to the occurrence of brain tumors, but the data are not conclusive.[12]

Lung Cancer.—Lung cancer was the second most common cancer among elderly men and the third most common cancer among elderly women in Hawaii. Consequently, the percentage of increase, though less than that of melanoma and brain cancer, still resulted in a substantial absolute increase in the annual incidence rates for this cancer in both sexes (60 per 100,000 in men and 34 per 100,000 in women). The rates have increased significantly in Hawaiian and Caucasian men and women, with more modest changes in Filipino and Chinese residents. The percentage of cigarette smokers is higher among Hawaiians and Caucasians than among Filipinos and Chinese in Hawaii.[13] This difference in cigarette smoking prevalence appears to account for only some of the observed ethnic variation in lung cancer rates.[14]

Colon cancer.—Colon cancer ranked second in frequency among elderly women and third among elderly men in Hawaii. It is established that inflammatory bowel diseases, such as ulcerative colitis, Crohn's disease, and certain inherited diseases, such as familial polyposis of the large bowel, increase the risk for colon cancer, but these conditions account for only a small percentage of the total cases.[15]

Alcohol consumption, dietary fat intake, physical inactivity, and large body mass have been associated with colon cancer, but more work is needed to establish these relationships as causal.[15] The ethnic patterns of exposure for some of these factors are not consistent with the corresponding colon cancer rates in Hawaii. For example, Hawaiians consume more dietary fat[16] and alcohol[13] than the Chinese, but the Chinese have higher rates of colon cancer.

Prostate Cancer.—The prostate is the most common cancer

site among elderly men; it is suspected that male sex hormones, dietary fat, occupational exposures and familial factors have a role in the etiology of prostate cancer, but the findings are not conclusive.[17] We have found that dietary fat and carotene intake were positively associated with prostate cancer risk among very elderly men in Hawaii.[18]

Breast Cancer.—Breast cancer is by far the most common cancer among women in Hawaii. The causes of this cancer are still unknown, but increased risk has been associated with a family history of breast cancer, a history of fibrocystic breast disease, early age at menarche, late age at menopause, late age at first full-term pregnancy, obesity, and radiation exposure.[19] Other suspected risk factors include oral contraceptive use, estrogen replacement therapy, high dietary fat intake, and alcohol consumption.[19] In a case-control study in Hawaii, we found that a family history of breast cancer, a history of benign breast disease, early age at menarche, late age at menopause and late age at first childbirth increased the risk for breast cancer.[20]

Conclusion

In general, the cancers that have increased in incidence among the elderly in Hawaii are similar to the cancers that have risen in the rest of the U.S. This is particularly true for melanoma and cancers of the brain, lung, colon, prostate, and breast. A comparison of the increases in cancer incidence rates across ethnic groups revealed the following noteworthy patterns: 1) melanoma has increased primarily among Caucasians; 2) lung cancer has increased mainly among Hawaiians and Caucasians in both sexes; 3) colon cancer incidence has increased substantially in elderly men and women in Hawaii; 4) prostate cancer has increased in all ethnic groups, but minimally among Chinese men; and 5) breast cancer has increased in all ethnic groups except elderly Filipino women.

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New Hope in the Treatment of Autism in Hawaii

Larry Poon MSIV, Nancy Partika MPH, William Bolman MD

As recently as 15 years ago autism was regarded as an incurable disorder of unknown etiology for which the best management was institutionalization. Due to the grim prognosis, pediatricians and child psychiatrists placed great stress on the accuracy of diagnosis so as to rule out any treatable causes. This picture has changed entirely during the late 1970s and 1980s, as autism has come to be recognized as a developmental disability (central nervous system disorders which affect sensory, integrative and motor functions resulting in abnormalities of development. Examples include mental retardation, learning disabilities, attention deficit hyperactivity disorder and autism). As it has become recognized that many of these conditions simply represented a static encephalopathy (like stroke or traumatic brain injury), people have understood that they often can respond greatly to early recognition and intervention. Thus, the current emphasis in care is to identify possible cases, even mild cases, so that appropriate preventive care can be provided.

As defined in the most recent *Diagnostic and Statistical Manual of Mental Disorders*, III, revised (DSM-III-R), autism is a developmental disorder with onset in infancy and early childhood. It ranges from mild to severe forms, characterized by impaired social interaction, impaired communication and repetitive behaviors or unusual interests.[1] The most typical clinical picture is that of an infant who fails to relate to the parent as early as the third month (ie, absence of the usual smile and expected mother-child reciprocity), who is unusually quiet and non-demanding of parental attention, and who does not develop communicative speech between the ages of 12 months and 18 months. Often the child will show unusual sensitivities or behaviors as well. Several good overviews of autism have been published.[2,3,4]

In the past, the tendency was to follow the infant or young child in the expectation he or she would "grow out of it." Unfortunately, with developmental disabilities this is not the case, and waiting prevents early intervention and promotes chronicity. It has been estimated that without early identification and appropriate correction of the social and communicative handicaps, some 40% to 60% of children who do not have useful speech by the age of 5 years will require long-term institutionalization at enormous expense to the family and the state.

Fortunately, that picture now is mostly preventable, which is the topic of this paper. Prior to 1992, autism in Hawaii was a much disregarded disorder. It was thought 1) to be a very low incidence disorder, with a prevalence in the range of 1 per 10,000. Recent studies have shown that the prevalence in fact is in the range of 1 per 1,000, a 10-fold increase! 2) there was lack of knowledge about etiology and the fact that autism represents a syndrome or set of behaviors of underlying neurobiological disorder; and 3) there was the absence of a well-defined system for diagnosis and follow-up. Thus, clinicians tend to be unaware of both the prevalence of the disorder and behavioral interventions which lessen or reverse autistic symptomatology.

Because of the above-mentioned factors, we can only approximate how many people may have mild to severe autism in Hawaii. According to 1992 statistics, the Department of Education reported only 65 children with the official diagnosis of autism. A 1991 survey by the Developmental Disabilities Planning Council identified some 120 in Hawaii with autism, 70 of whom were children. However, based on national statistics, for our population there are thought to be some 1,100 autistic people, including 250 children. Thus, the majority of cases in Hawaii are unrecognized and may be receiving inadequate or inappropriate services.

It was this combination of unmet needs for families and children, a newly emerging and exciting field of autism research and development of services along with the threat of multiplying life-long institutional care, that motivated the Hawaii State Legislature in 1991 to begin to address the issue of autism in Hawaii. Thus, in 1992 the legislature passed an act creating a Resource and Technical Assistance Project on Autism.[5] The project was placed under the overall umbrella of the University of Hawaii Affiliated Program (UAP) which supports a number of projects related to education and training in developmental disabilities. Presently the Autism Project is staffed by a coordinator, 2 parent advocates, secretarial staff, an advisory committee, and active linkage to the Autism Society of Hawaii, a parent advocacy group composed of parents of autistic children.[6]

Overview of Present Services.—In the report of the State Planning Council on Developmental Disabilities to the legisla-

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ture,[7] it was noted that: 1) There are few professionals in Hawaii who are experienced in differentiating between autism and other developmental disorders; individuals suspected of having autism often are referred to UCLA Medical Center or elsewhere on the Mainland at a cost to the family, private insurers and state of a minimum of $40,000 per workup.

2) Educational services are inadequate to deal with autistic subjects for several reasons; the University system has no autism-specific classes in their special education curriculum, and the Department of Education has no training module on autism. Thus, the educational and communication training needs of autistic children tend to be inadequate.

3) Existing services in the state are even more inadequate. Oahu has a) the Autistic Vocational Education Center (AVEC) which provides vocational training to 21 adults with autism, and b) the Behavior Treatment and Training Service (BITTS), which deals with some 11 autistic clients. Unfortunately, support services such as home-support or extended day school with trained personnel are virtually nonexistent; case management by state social workers is impaired by high case loads. Family services, respite care, crisis intervention, and other essential services are both difficult to access and expensive. Obviously these problems are compounded on the Neighbor Islands.

Knowledge of autism by families and the medical community.—In order to assess physician and family awareness of the issues involved in services for autism, the first author (LP) surveyed families with autism and physicians in 1992. One hundred questionnaires were sent to each group, with responses returned by 24% of families and 17% of physicians.

Family survey.—Families responding to the survey reported the following:

1) their child was not identified as autistic until the average age of 4 years. Given the reports that preventive interventions need to be well underway before this time, this is a worrisome finding.

2) initial diagnoses for children with autism included "mentally retarded," "developmentally delayed," "attention-deficit hyperactivity disorder," "autistic-like," and "atypical pervasive developmental disorder." This confirms the general lack of knowledge and confusion about the diagnostic characteristics of the disorder.

3) Six families relied on the family physician or an education specialist to make the diagnosis, 18 families needed specialist help from a child psychiatrist or psychologist, and 3 families went out of state for a definitive diagnosis.

4) Fifteen of the 24 children are in special education classes. Seven of these 15 live on the Neighbor Islands and describe their situation as being extremely frustrating due to the limited community resources to meet their child's needs.

5) The top 5 services identified as most needed by the 24 families were: a) special education; b) behavioral management; c) day care/respite care; d) speech and language services; e) education of the medical community so they would be better able to identify autistic individuals at the earliest possible time to receive effective intervention and treatment.

Physician survey.—1) Of the 17 physicians who responded, 8 said they see or have seen autistic patients. This speaks to the large number of estimated cases that are not recognized.

2) These 8 said they provide "medical care," and only 3 mentioned referral to specialists as part of their management strategies. This illustrates the past lack of knowledge about autism.

3) The 5 most needed services identified by physicians were: a) respite care; b) support system for families; c) behavioral management; d) psychiatric services for parents, siblings, child; e) special education.

Interestingly, only 2 of the 17 physicians surveyed identified education of the medical community as an important issue. The perceived need for psychiatric services (ie, for treatment) also reflects lack of knowledge about the etiology of autism. As we mentioned above, during the 1950s and 1960s autism was regarded as being psychogenic, caused by inadequate mothering (the so-called "refrigerator mother"). Child psychiatrists can be very helpful due to their knowledge of abnormal child development, ability to play an advocacy role, and support parents with child rearing and getting needed communication and educational services. However, it is now recognized that psychotherapeutic services usually are not necessary, and what is especially helpful is the use of psychoactive medications to help with abnormal behaviors (clomipramine for obsessive-compulsive symptoms, naltrexone for self-injury, haloperidol for aggression, etc.)

Discussion.—The parent survey reveals that misdiagnosis and late diagnosis are the key issues confronting physicians and parents in Hawaii today. The lack of identification of autism until age 4 virtually ensures a high level of chronicity and institutional care. Social and communicative relatedness are so basic to the rest of development that identification needs to be made between the ages of 1 to 1 1/2 years. Since it has been found that autism is syndromic, variable in severity and treatable, there is no longer the need to insist on diagnostic precision. What is important is to know that delays in social relatedness and speech are symptoms of developmental disability, including autism, and rather than following to see if will improve, referral to early intervention services like the Autism Project or Zero-to-Three Hawaii is indicated.[8]

Also, since the state legislature provided funding for the Autism Resource and Technical Assistance Project, the situation is becoming much more hopeful. The Autism project's staff has been actively seeking the most current national and international knowledge on autism, case finding, developing a network of professionals to assist with evaluation, diagnosis and consultation; surveying needs in the community, and networking with local and national agencies. For example, the National Autism Society is a useful source of knowledge, publishes a newsletter called *The Advocate*, and holds well-attended meetings. Similarly, the Autism Research Institute in San Diego (founded by Bernard Rimland PhD) publishes a quarterly review of the published literature and reviews on autism therapies. Finally, the Hawaii Autism Project and the Autism Society have been highly successful in creating an annual meeting which brings a national

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On the Quest for the Humane Physician

Irwin J. Schatz MD

I would like to start by quoting from the book *Becoming a Doctor* by Melvin Konner, who describes his experience as an intern at one of the large Harvard-affiliated Boston hospitals.[1]

"Monday morning, on rounds, we all went into the patient's room and collected in a semicircle some distance from her bed. She lay completely constrained, weak and helpless, in a lower body cast and one arm in a shoulder cast, tubes in her nose and in her free arm. Her face was distressingly alert. The senior resident presented her to the group, and the attending physician asked him a few perfunctory questions. No one spoke to the patient, touched her, or even met her eyes during the 5 minutes we spent in her room. The senior resident was moving the group out when she began speaking. She looked around at the white coats in fear and confusion. In a thick, regional working-class accent, she asked, 'Can I have something for the pain?'

"The resident stopped, looked at her from where he stood about 4 feet from the bed and said, 'You bet.' This was the single exchange that occurred between this patient and a physician during the daily period at her bedside."

We all agree that this is appalling, yet does this vignette strike a respondent chord in anyone? Is it perhaps symbolic of what we fear has happened to us and to medicine?

None of us would ever choose to be involved in such a depressing encounter, and yet perhaps deep in our hearts we sense elements of truth, glimmers of guilt, and memories of our own behavior which we fear came very close to this nightmare.

The hallmarks of the humane physician may be considered to be integrity, respect, and compassion. The American Board of Internal Medicine has defined integrity as the personal commitment to be honest and trustworthy in evaluating and demonstrating one's own skills and abilities. Respect is our need to honor the choices and rights of those with whom we come in contact, most particularly, our patients. Compassion is the capacity and willingness to share in the pain and anguish of those who seek help from us, without at the same time permitting excessive emotional involvement.

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There are many different definitions but these will do. We must examine whether our humaneness as physicians, made up of these 3 characteristics, has diminished or disappeared. If it has, we must ask if this is a new or an old phenomenon, and whether it is derived from an inherent contradiction between science and technology on the one hand, and humanity and compassion on the other. Finally, we must consider what role medical education has played in creating and enhancing this lack of humanity. I will try to speculate on each of these, with particular emphasis on this last point.

The idealized, turn-of-the-century concept of the physician is best exemplified by the famous Norman Rockwell *Saturday Evening Post* cover showing a kindly, somewhat portly, older doctor standing by the bedside of a sick child with a hand cupped under his chin. The entire scene suggests compassion and empathy, and a wisdom derived from years of selfless service. Surely this is the image that we believe the public wishes of us, and in turn what we want to be. Has there been a downward spiral from this selfless, underpaid altruism to the greedy, egocentric, uncaring technician?

Looking back in history to 500 BC the great Greek philosopher Heraclitus said, "Doctors cut, burn and torture the sick, and then demand of them an undeserved fee for such services."[2] In the 17th century, LaBruyer remarked, "As long as men are liable to die and are desirous to live, a physician will be made fun of but will be well paid."[2] Benjamin Franklin said, "God heals, and the doctor takes the fee."[2] And Marcel Proust, one of the great hypochondriacs of the modern era stated, "Medicine being a compendium of the successive and contradictory mistakes of medical practitioners, when we summon the wisest of them to our aid, the chances are that we may be relying on a scientific truth, the error of which will be recognized in a few years time."[2]

Thus the perception that physicians lack humanity is not anything new; as an amateur sociologist I believe this reflects the fact that most people do not want to be dependent on others for their care and health, and that relying on a physician creates tension, anxiety and sometimes hostility.

Physicians' humanism probably has been perceived as deficient through the ages—but is it worse now? I submit that it is. A major cause is considered to be the sophisticated, successful system of medical education that has evolved in North America. I will paraphrase Edmund Pellegrino, "This criticism is especially poignant for medical educators, at whose door much of the responsibility for this lack of humaneness is laid. We are told

that we neglect the teaching of human values and the art of medicine, and that in our zeal for science we ignore liberal studies and that the patient care we provide in our teaching hospitals and clinics is itself dehumanizing."[2] As eloquent as Pellegrino is, what evidence does he have for this indictment?

Unfortunately, in order to obtain any firm ideas as to whether the process of creating a physician promotes dehumanization and diminishes intrinsic humanity, one needs to accept the scientific techniques of academic sociology, because that is where the data exist. For those of us trained in the requirements of hypothesis setting and testing that are necessary for medical science, conclusions derived from studies in the social sciences lack rigor. But these are all we have.

Let us start then with the premedical education of our potential physician. No less an authority than the Association of American Medical Colleges, in its 1984 report on the General Professional Education of the Physician, stated that many students "...embark upon premedical education with a narrow objective: To prepare for admission to professional school. The result too often is premature specialization and failure to obtain a broad rigorous education."[4] The logical extension of this is because premedical education in the past has been narrowly confined to scientific subjects such as organic chemistry, mathematics, physics and zoology, and has not included studies of music, art, literature, history and philosophy, that this imbalance ultimately creates a narrowly focused, unfeeling, inhumane physician. Such a hypothesis is superficially attractive but in no way proven. In fact, when the data supporting this is examined, there are none.

Although it may be true that those interested in the humanities turn out to be humane and sensitive physicians, it is likely that this is a self-selecting phenomenon; that is, those who happen to be sensitive and compassionate also happen to be concerned with the humanities.

We must recognize that there is a difference between the humanities and humanism. One of the consistent cliches in this area is the belief that the compassionate physician cannot be scientifically minded. As Seymour Glick has stated, "Focusing on the humanities as playing *the* pivotal role in compassion is misplaced and represents a misunderstanding of what humanities can and cannot accomplish. After all, the humanities, particularly the arts, are ethically neutral. They provide important aesthetic values but inherently embody few ethical values. For instance some of the world's most heinous crimes were perpetrated to the strains of Haydn and Mozart by individuals immersed in the works of Goethe and Heine."[5] It is true that the classic humanities teach reasoning, judgment and logic by exposing students to a variety of ideas. Accordingly, sensitivities are heightened, and the subtleties of life may be appreciated better. But exposure to the humanities by itself does not necessarily create a more humane physician. Glick says that we, as the educated elite of our society, project our own desires and prejudices when we stress the need for humanities as essential for physicians. Clearly we might prefer physicians who are cultured and capable of discussing the theater or the concert while palpating an abdomen, but the vast majority of patients probably are not concerned about what books their physician reads. Most patients want a competent and compassionate caregiver and not necessarily a cultured one. In my opinion, selecting a medical student with a broad background in the humanities should not imply that the exposure will *create* a humane physician; it is more likely that interest in the humanities and the potential for humaneness probably go together.

If it is not the premed process that starts this dehumanization, then clearly it must occur during medical school and residency. Konner's book and others, such as *The House of God*, amply describe the horrendous and shameful denigration of patients that occurs in our best medical centers, and they demonstrate the repeated exposure of impressionable medical students and residents to unfeeling, uncaring and inhumane professional behavior. Such desocialization starts with the students' first exposure to the cadaver and then proceeds as the students see how patients who are hopelessly ill and dying are dealt with. These critical incidents may have a profound effect on emotional maturation. The necessary distancing of physician from patient, which even the most compassionate and humane physician requires in order to function effectively, is often misinterpreted; for instance, the dispassionate recital of the symptoms and signs of a dying child at the beside must have a powerful impact on an impressionable student's mind. The message clearly must be, "This is how it is done, don't get too involved or you won't be able to function."

Agnes Rezler provided the best summary of attitude changes during medical school.[6] She confirms that the interpersonal attitudes of medical students change substantially from the first to the last year of medical school, and that special teaching programs really have very little impact in changing these attitudes. Furthermore, her data support the concept that the medical school environment fosters cynicism. Obviously, medical students, like all others, have personalities, motivations and fantasies, and they build psychological defenses. These mechanisms are necessary for their emotional survival during training. One of these defense mechanisms may be cynicism, defined as "behavior characterized by the conviction that human conduct is directed by self-interest or self-indulgence and that it is typified by detachment and toughness in interpersonal relations." Does this not accurately describe many of our colleagues, students and residents?

It all started with Abraham Flexner in the early part of this century, who surveyed the sorry state of our medical schools; he recommended and implemented a series of revolutionary changes so that medical education could become properly based as a scientific discipline. From these necessary changes, however, have evolved the following: First, an excessive concentration on accumulating and memorizing enormous numbers of facts; second, negligible contact with patients, sometimes not until the senior year; and third, a preoccupation with grades and competitive performance rather than on helping the patient.

Simultaneous with these changes occurred a series of breathtaking scientific breakthroughs with which we are all familiar: The discovery of antibiotics, the application of technology to diagnostic and surgical maneuvers providing heart-lung machines, sophisticated anesthesia and ventilators; the develop-

ment of imaging techniques which permit us to virtually dissect the human body with x-rays, contrast material, and radioisotopes; and finally the new era of molecular biology, which will lead to an even more astounding series of technological advances. Where does this leave the patient? Some would say he or she has become an object to be probed, dissected, analyzed, and assessed, often by specialists concerned with only one organ system. We forget that there is a psyche as well as a soma. We have no time to stand at the bedside with our hands under our chins being compassionate and wise. There is too much to do in the laboratory.

Contemporaneous with this tremendous increase in technological advance has been the intense competition among young people to become physicians, only recently abating. This competition was so extraordinary that collegiality disappeared, and it became each man or woman for her or himself. MCAT scores and competitive interviews were all that mattered. The same holds true for house-staff positions. Competition is the framework around which our premed students, medical students and residents work. It pervades our system of medical education. Intellectual elitism is our standard: It is not the most compassionate student or resident, it is the student who achieves the highest grades on his or her test scores selected by our honor society, Alpha Omega Alpha. Thus, the lessons learned by our students and residents are that the relationship with the patient has a low priority, that performance is measured best by grades, and that achievement is reflected by the prestige of the medical school, the residency program and the institution.

Coupled with this intense need to compete and achieve is the fact that residents change attitudes during their 3, 4 or 5 years of training. Data exist that indicate that house-officers consider themselves less idealistic about their role in medicine and its role in society, less patient, less tolerant, and less well-rounded as human beings.[7] Some confess to being more cynical, selfish, and materialistic than at the outset of their house-officer training. Many report heightened sensitivity to their own needs rather than to those of their patients, colleagues, and families. One survey indicated that one-third of residents felt that their self-image had worsened during their training, that their overall happiness was adversely affected by sleep deprivation and the resultant poor quality of life outside the hospital. Nearly all residents in this survey reported experiencing emotional distress during training.[7]

Rotbart and colleagues, who performed this interesting study, felt that cynicism, callousness and carelessness of physicians during residency and later in their careers were not inborn character flaws but were evolved self-protective mechanisms, and that the evolution of these defenses clearly begins during residency.

Rotbart further noted, "Energetic and altruistic young medical students are battered by a system that emphasizes economics over the emotional well-being of its trainees. The products are physicians who can do more damage to their patients in practice than they ever did during residency."[7]

If we accept the fact that the process of medical training inevitably leads to an increase in cynicim and a decrease in compassion, is there any way by which we can change this process? There are plenty of theories: For instance, emphasis on problem-based learning, in which students are taught both basic sciences and clinical medicine around a specific clinical problem, rather than in the traditional lecture format is thought to be a method by which humaneness is not compromised. But there are no data, none at all, that confirm this hypothesis even though many medical schools are making large-scale commitments to this educational method.

Unfortunately, I have a rather pessimistic view of the potential success of any attempts at changing this system. Not because medical educators, practicing physicians, medical students and residents are bad people and are therefore self-selected for lack of humaneness, but simply because of the impact of our current culture on values, goals and aspirations. The traditional Judeo-Christian view of human's role is that we exist to serve some higher purpose. Almost precisely antithetical to this is the pervasive philosophy of our time: Self-fulfillment, permissiveness and self-gratification.

Our society has been transformed from religious to secular. The revolution in child-rearing that has occurred over the past 50 years, in which happiness and self-expression are the preeminent objectives and where discipline and responsibility to others are submerged, may be more responsible for our lack of humaneness than any other factor. Glick states, "The crisis of humane medicine is the result of the failure of secular, democratic societies to inculcate moral and ethical values into their educational systems."[5] Furthermore, he points out that for a large proportion of Western society that is secular and not formally religious, a substitute for the ethical training derived from religion is an urgent societal need. It is likely that human motivations, goals, values and concerns are well-developed by the time a student enters medical school.

The premedical education of our students plays little if any role in initiating the dehumanization process. However, the complexities of our technological revolution and the necessities of compacting enormous amounts of information and learnable skills make dehumanization during medical training inevitable. To change this requires an enormous effort, because it means attempting to modify attitudes and values of all of those to whom our students are exposed.

But even more important, I feel, is that this process is as much or more a function of societal pressures, derived from our exaggerated emphasis on permissiveness and self-fulfillment as the ultimate goals in our lives. The pervasive effect of the media, and particularly television, inculcates an enormous concern for ourselves and our own need for self-gratification. An average of 7 hours of television viewing a day breeds passive, nonparticipating self-indulgence in which the entire external world is shut out. It becomes a narcissist's delight! And unfortunately, narcissism and compassion clearly are not compatible. In fact, liberalism, defined as a compassionate concern for those less fortune than we, has now become a label of shame and derision, so much so that our political candidates shun using it.

As Glick has pointed out, the belief in the uniqueness of humans and of service to a higher goal as the primary motives of

life may best be subsumed under the general rubric of a religious world outlook. But surely there are many humane physicians who are not religious and, contrariwise, there are many religious physicians whose humaneness may be questioned. The important point is that even those without formal religious allegiance may have distilled from their cultures and background important and positive ethical messages. As Glick says, "Whether these ethical distillates, uncoupled from their religious moorings, will be transmittable to subsequent generations remains questionable and probably will be one of the major tests by which our secular societies will be judged."[3]

My plea then is for a return to ethical values which, in the past, were best supported by a religious framework. I do not think it is necessary for us to attest to a formal religion in order to become more humane. I do think, however, that the quest for values and ethical standards is now, more than ever, a goal for which the humane physician must strive. Unless we do so, the deterioration of our culture will be reflected by a continuing lack of humanity in our care-givers.

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Autism in Hawaii

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autism expert to Honolulu. The first conference in 1991 featured Dr Gary Mesibov of Division TEACCH of the University of North Carolina at Chapel Hill, the 1992 speaker was Dr Douglas Bicklin of Syracuse University, and the 1993 conference presented Dr Temple Grandin, the best known person with autism in the U.S. She is a professor of animal husbandry and a national autism educator. To date, these annual conferences have trained more than 450 professionals and parents yearly.

Yet another contribution that will be of particular use to local physicians has been the availability of the newest screening questionnaire for autism, the Childhood Autism Test for Toddlers (CHAT). This straightforward 14-item questionnaire should be of great value for the initial screening of children as young as 18 months.[9] It is hoped this will help make possible the recognition of autistic symptoms at an age when active intervention can prevent the more serious sequelae of unrecognized autism. Copies are available from the Autism Project and can be requested by phone.

Of course these developments, helpful as they are, are only the beginnings of what is hoped to be accomplished. For example, the aforementioned survey identified the following key needs. 1) a structured special educational program geared to the child's developmental level of functioning, especially the unique communication problems of autism; 2) daily, intensive, individualized speech and language therapy; 3) auditory training; 4) technical assistance on behavioral management; 5) respite care; 6) appropriate residential care; 7) better education of medical students, residents and physicians; 8) creation of a statewide network of services to support children and families on all islands.

In addition to the humanistic and medical issues above, Hawaii is at an ideological and economic crossroads with regard to autism. If we continue as we have in the past, an increasing number of children with preventable handicaps will require expensive, lifelong institutionally based care. In addition to the cost to children and families, as teenagers without social and language skills and unable to express their needs, autism victims become unmanageable at home and in the community (unlike Down's syndrome for example), and hence will require institutional care. The expense of such care eventually bankrupts families and requires state funding, a cost in excess of $125,000 a year per adolescent, or a lifetime estimate of $6,250,000 per child. We already lack the institutional capacity to adequately address this issue. By delaying needed services until they are forced on us by the developmental pressures of adolescence, we are unable to avoid the expensive, institutional care. It is our hope that the presence of the Autism Project, combined with aroused community awareness, will allow us to adopt the prevention and cost-effective models present in several states, eg, North Carolina, New Jersey and California. These family and community-based coordinated service systems utilize both autism-specific and generic disability services in order to provide a full range of service options for persons with autism. Such a system not only can prevent the needless handicap in the higher functioning autistic child, but also can maintain the more severely impaired, low functioning autistic child in the community.

Hawaii is now moving in this direction, and it is hoped that physicians will support this improvement in care.

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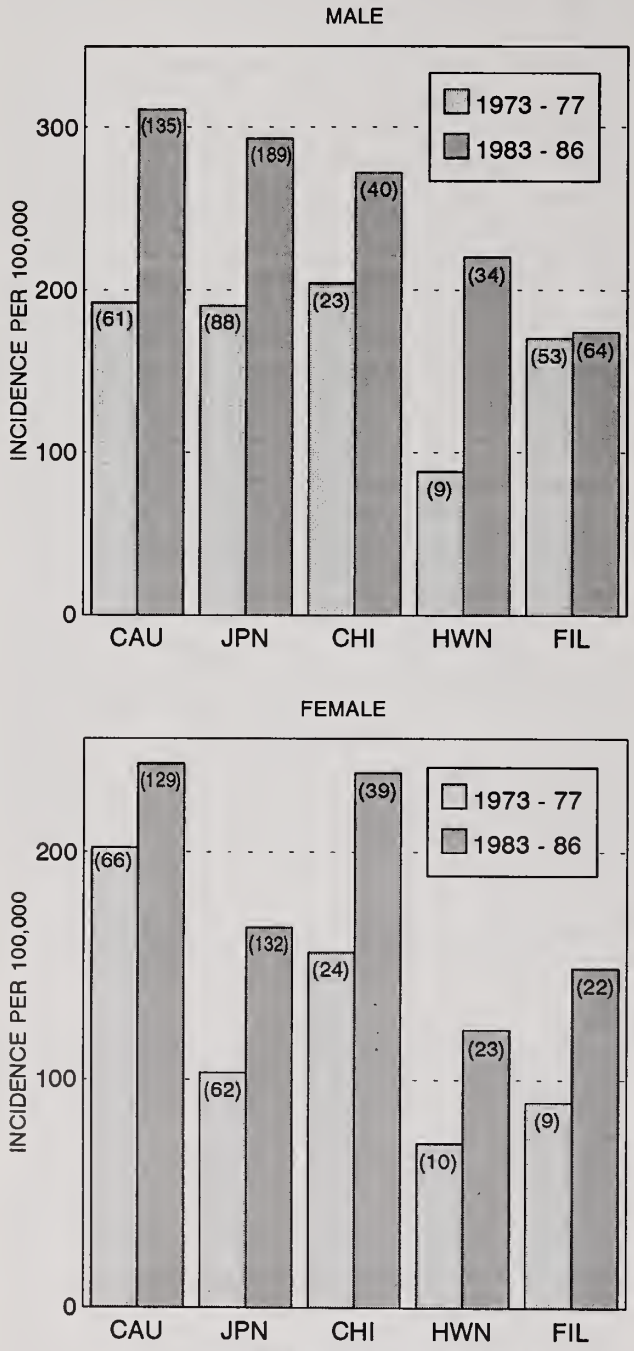


Fig 4. - Average annual incidence per 100,000 of colon cancer by sex and ethnicity for the time period 1973-77 and 1983-86. Number of cases is in parenthesis.

The Rise of Cancer Among the Elderly in Hawaii

➤ *(Continued from Page 193)*

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Breast-Conservation Treatment



AT LEAST ONE-THIRD OF ALL BREAST CANCER PATIENTS COULD HAVE LUMPECTOMY FOLLOWED BY RADIATION THERAPY

The American Cancer Society, the American College of Surgeons and the American College of Radiology have agreed that women whose early breast cancer was detected by mammography are candidates for breast-saving treatment. According to new standards, women with small lumps, those with tumors as large as two inches, and even some women with positive nodes may be candidates for this treatment.

Stage for stage, patients treated in this manner have the same longevity and the same freedom from local recurrence as those treated with mastectomy.

For copies of the standards please contact Keri Sperry, American College of Radiology, 1891 Preston White Drive, Reston, VA 22091.

acr

AMERICAN CANCER SOCIETY

Classified Notices

To place a classified notice:
HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Wanted

Pediatric Locums. Board eligible pediatrician available for locums tenens positions on Oahu beginning September 1, 1994. Kapiolani trained. Additional Level II and III neonatal experience. Privileges pending at Kapiolani and Queens. Willing to consider Neiighbor Island positions during holidays and school vacations. Contact Dr Marily Ahearn. July 15 to Aug. 31, at 20 Scenic Place, Friday Harbor, WA 98250. (206) 378-7090. From Sept. 1, at (808) 395-5532. CV and references may be requested.
Part time physician. The Honolulu Military Entrance Processing Station needs a physician to do medical exams on applicants for the Armed Forces. MD or DO. Any specialty. Must have valid license. No malpractice insurance needed. Ideal for retired physician. Please call John Kustermann MD at 541-2997/2580.

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A beautiful townhouse on the lake at South Lake Tahoe is available year-round. Three bedroom, 3 bath, boatdock. Great winter skiing, summer sports, and 5 minutes to State Line casinos. Excellent rates—depending on season/duration. Call Tom Nordyke MD at 524-2575.

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Waipahu area. Medical offices available in new building 845 to 3736 s.f. Abundant parking, clinical lab on site, plumbing and more. For information call Paulette Wray (R) or William Joor (R), Chaney, Brooks Realty 528-0039.

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General internal medicine practice; established, very successful, grossing $400,000 not including hospital income, Medicaid less than 5%. Write: Medical Practice, 94-300 Farrington Hwy., Suite 120, Waipahu, HI 96797-2648

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Sub-Zero manufactures the finest side-by-side, exclusive bottom freezer, and unique separate refrigerator and freezer pairs. The 500 Series models come in 30", 36", and 48" widths. Undercounter refrigerators, freezers and ice makers are also available.

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SUB-ZERO

News and Notes Henry Yokoyama MD

Life in These Parts

Physician Discipline.—The *Wall Street Journal* reports that 3,078 U.S. doctors were disciplined in 1993; 3.6% more than in 1992. We are proud and not surprised that Hawaii was one of four states with less than 0.2% of its doctors disciplined. The *Journal* stats are based on data compiled by the Federation of State Medical Boards.

Inner Health.—The Queen's Medical Center has a program called *Lokomaika'i* or inner health. The program has three project coordinators and delivers care with more smiles, more hugs, more touching and more respect for the patients' cultural and spiritual values.

Queen's has added 24-hour visiting on two wards, family rooms and small medical libraries on the wards. Speakers are invited to talk to staff about tai chi, massage therapy, *ho'opono'pono*, acupressure and acupuncture. Chief of staff, endocrinologist **Werner Schroffner** says, "It's a holistic approach. In order for a patient to get well, it's not just surgery and drugs, but other things less tangible."

Bumper Sticker.—**Fred Reppun** reports seeing a Cadillac driven by a wahine, sporting the following bumper sticker: "This car protected by a pit-bull that has AIDS."

Welfare Moms.—*Advertiser* staffer Kevin Dayton wrote about how 183 Medicaid-funded fertility prescriptions were authorized in 1993. Their cost of $9,470 out of a $429 million Medicaid budget was not much at all, but it was enough to stir some legislators and merit an *Advertiser* editorial. "We believe that the State welfare system should encourage prospective mothers to defer parenthood until they're self-supporting. The State should do what it can to ensure that Medicaid does not provide fertility drugs."

Potpourri

"I'm going to tell you what I tell everyone who sits in that chair," the IRS agent said to the nervous tax payer. "It's a privilege to live in this great country, and you should pay your taxes with a *smile*."

"Phew, what a relief," said the man sighing, "For a minute there, I thought you were going to ask me for *money*." (From *Playboy Party Jokes*, May 1994)

"Doctor, I've decided to get a vasectomy." "Mr. Glenn, this is a serious decision," the physician advised. "Have you talked this over with your wife and children?" "Oh sure," Glenn replied, "They're in favor of it 15 to 2."

Country Doctor in Waimanalo

Likeable **Charman Akina**, 61, former Honolulu Medical Group internist, quietly practices medicine at the Waimanalo Health Center. He carries a little black bag, makes house calls, and is "the closest thing to Marcus Welby MD." He provides equal treatment to any and all patients, whether well-heeled or penniless, and he works *pro bono* "for the public good," viz without pay.

Kawahine Kamakea-Ohelo, executive director of the struggling non-profit center recalls when Charman applied for work. "We told him 'We really can't afford you.' He said, 'Don't worry about it.' He is god-sent. We're blessed to have him. He understands our plight."

Charman says, "I always wanted to work in a community where there are a lot of Hawaiians. I was glad to do this after I retired, but it dawned on me that physicians don't retire, they just get older and fade away. It was my birthday present to me. I retired on my 60th birthday and immediately came here. I'm part Hawaiian; I wanted to help out a Hawaiian community. I understand Hawaiians and they understand me."

Elected, Appointed and Honored

Honolulu pediatrician **Cal Sia** has been invited to serve on the Federal Advisory Commission on Childhood Vaccines of the Health Resources and Services Administrator.

Brian Martin has been named president of the Mental Health Association in Hawaii for 1994.

"A Way to Cut Medical Costs: Accept Death" (by Max Botticelli MD)

We have tried unsuccessfully to abstract Max's inspirational essay carried in full under "Focus" in the Sunday, January 23, 1994 *Honolulu Advertiser*.

"America's health care crisis is an economic one. One proposed solution is to divert expenditures from the cure of illness to maintaining good health. Also, to make a significant reduction in medical care costs, we have to take a new approach to the waste that accompanies the care delivered to patients nearing the end of their lives.

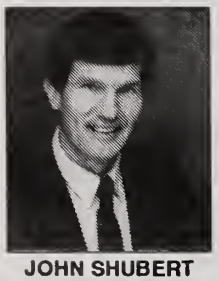
"A relatively small group of individuals account for most of our health care costs. That group for the most part is over age 65, has chronic infirmities, is well insured and can afford out-of-pocket expenses for technically sophisticated care. Preventive medicine may have little impact on these eventualities. To avoid spending large amounts on tertiary care, we must be more accepting of death. Being more accepting of death is consistent with the philosophical and religious constraints that have always governed our lives.

"In my view, change in our attitude about death has resulted in excessive attempts to prolong life. Human beings have contemplated the meaning of life and death since the emergence of our species 40,000 years ago. What is common is a belief in the hereafter and acceptance of death as a part of and essential to the whole life process.

"*Sanctity of life* is used as an argument against abortion and euthanasia, but when used to maintain life as long as technically possible, it does not fit in our ethical systems. When it becomes obvious that death soon will occur, we should recognize and prepare for death. Treatment interventions should be directed at maintaining function and comfort. Life-prolonging treatments should be avoided.

"For more cost-effective, gentler, and transcendent end-of-life experience, I suggest: Let's focus on the quality of life rather than length. Let's develop better societal standards to value outcomes. Let's learn to accurately measure outcomes and relate them to costs, and use these calculations in developing these standards. And let's have a vigorous and comprehensive campaign to redirect the public's attention from saving lives at all costs.

"Henry Miller has expressed my feelings with clarity and simplicity: 'In the attempt to defeat death, man has been inevitably obliged to defeat life, for the two are inextricably related. Life moves on to death and to deny one is to deny the other.'"


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Medical Humor

(A condensed story from *Stitches*, March 1994)

He's Got the Blues.—A very alarmed young man came in because his genitals were turning blue. On examination, his scrotum was indeed a pronounced dusky blue. After close inspection, we tried an alcohol sponge and to our great relief, the discoloration came off easily. The young man left the office reassured and with instructions to wear underwear with new blue jeans. (T. Britt Simmons, Calgary.)

Conference Notes

Pathophysiology of Alzheimer's and the Role of Therapeutic Agents by Erno Daniel MD, PhD from USC at the Kahala Hilton on March 15, 1994 and sponsored by Parke Davis. "Alzheimer's Disease (DAT) is of personal interest, a socioeconomic problem and a philosophic issue."

Ddx delirium and dementia:

Delirium	*Dementia*
Acute onset	Slow, gradual onset
Fluctuating course	Progressive course
Low level of consciousness	Normal level of consciousness
Profound inattention	Variable inattention
Variable performance	Constant perfomance

Alzheimer's: A diagnosis of exclusion; not accounted for by other illnesses.

Brain pathology: neuritic plaques and neurofibrillary tangles.

Social impact of DAT: 4 million adults afflicted in U.S.; 100,000 annual deaths; costs $80 to $90 million annually.

Demographics of DAT: Few cases under age 65; 5% of population over age 65; 10% of population between 75 and 85; 20% to 40% over age 85.

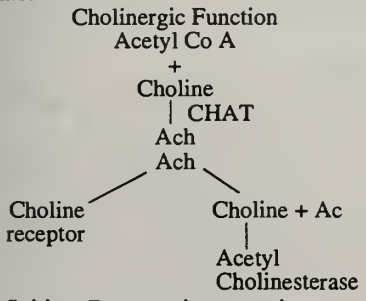
Etiology of DAT: a. Cause? (Amyloid); b. No transmissability; c. Syndrome of different diseases.

Genetics of DAT: Autosomal dominant; 4 times greater risk in relatives.

Brain changes in DAT: Gross cerebral atrophy; dilation of ventricles; asymmetric pattern; changes in blood flow/glucose utilization; plaques and tangles in cortex and hippocampus (but not in basal ganglia and spinal cord).

Amyloid Hypothesis: Amyloid deposits increase with age; apolipoprotein E; neurohumoral pathology.

Cholinergic Hypothesis: Decreased acetyl choline:



Definition: Decrease in serotonin, norepinephrine, and acetylcholine.

Trophic fats hypotheses:

Frequency of Dementia

DAT (Dementia Alzheimer's type)	52%
MID (Multi-infarct dementia)	17%
DAT + MID	14%
Brain tumor	7%
Parkinsonism	2%
Psychotic	1%
Unknown	7%

Ddx Dementia

a. Dementia
b. Alzheimer's
c. Dementia Extrapyramidal
d. Dementia with Focal Sx
e. Depression
f. Chronic Confused State

Focal Signs

a. Vascular
b. MS
c. Trauma
d. Subdural
e. Neoplasm
f. Infection

Treatable Causes of Dementia

A. Drugs and Alcohol
 a. beta blockers
 b. methyldopa
 c. clonidine
 e. haloperidol, etc.
B. Tumor
 a. CNS invasion
 b. Remote effect
 c. SLE
C. Metabolic Disorders
D. Nutritional Disorders: eg, B_{12} deficiency; Folate deficiency
E. Infection: eg, syphilis, abscess, encephalitis
F. Inflammatory disorders: eg, SLE
G. Endocrine

Evaluation of DAT:

a. Hx
b. PE
c. Cognitive function
d. Psychiatric evaluation
e. Behavioral assessment
f. Mini mental-status test
g. Screening metabolic panel; B_{12} and folate; urinalysis; CBC; thyroid function; syphilis, HIV tests; optical CSF
h. Brain imaging techniques:
 1) CT and MRI: structural changes; atrophy; ventricular enlargement
 2) SPECT: cerebral blood flow
 3) PET: glucose function; cholinergic system

DAT Management: Therapy

1) Acetylcholine dysfunction: Tacrine/TVA
2) Amyloid deposits: No treatment available
3) Loss nerve cells: no treatment available

Re Tacrine: (Nothing magic about the 6 weeks)

1) Dosage changes:
 40mg/d for 6 weeks
 80mg/d for 6 weeks
 120mg/d for 6 weeks
 160mg/d for 6 weeks
2) Toxicity: a/c time; not dosage
3) Results of 30-week study: At 160mg/d dose:
 a) Improve: 42%
 b) No change: 28%
 c) Worse: 20%
4) Adverse Effects:
 a) N&V: 27%
 b) Diarrhea: 16%
 c) Elevation ALT: 29%

Re ALT Elevation: Idiopathic hypersensitivity reaction.

Median time to onset: 6 weeks
Median time to maximum elevation: 7 weeks
At 18 weeks: 95% up to 3 times normal

Conclusions: Alzheimer's is a multitransmitter disease.

LFT must be closely monitored (with tacrine use).

Investigational drugs:

Phase I/II:	4 drugs
Phase II:	10 drugs
Phase III:	6 drugs

Ten most common diseases in elderly: (Think of medical problems when treating DAT)

a. Arthritis 39%
b. Hearing loss 22%
c. Heart disease 17%
d. Hypertension 16%
e. Visual loss 15%
f. Chronic sinusitis 11%
g. Digestive diseases 12%
h. Mental/neurological 10%
i. GU 8%
j. Circulatory 7%

DAT Management:

1. Sudden delusions in DAT: Treat with:
 a. analgesics
 b. antibiotics
 c. antipyretics
 d. oxygen
2. Anxiety/Agitation in DAT:
 a. Non-pharmacologic treatment:
 1) Provide calm surroundings
 2) Give reassurance and affection
 3) Provide outlet for nervous energy
 4) Avoid caffeine

Sleep disturbances:

a) Exercise
b) Avoid naps

Agitation Rx:

a) Analgesics
b) Antidepressants
c) Beta blockers
d) Anti-psychotics
e) Avoid anti-cholinergics
f) Trazodone (Desyrel) very effective
g) Benadryl
h) Benzodiazepines: worsen
i) Buspirone: drug of choice

In court there are winners and there are losers. The winners are the lawyers, the losers are everybody else.
Optometrists in Iowa have brought suit against the Iowa Academy of Ophthalmology, its executive director, and three ophthalmologists, alleging a conspiracy to block optometrists from providing postoperative care. Defendants have denied the charges and are considering counteraction. The Iowa Board of Medical Examiners was not named, although the case involves a 1992 board ruling made at the request of the academy. The ruling states "management of postoperative ophthalmic care constitutes the practice of medicine and cannot be managed by other health care practitioners, except under the direct supervision of the surgical ophthalmologist." According to the AAO, 14 other states have comparable rulings. In 1991, the Florida appellate court upheld a similar statute after vigorous challenge by nurses and optometrists.

We are all going down the same road in different directions. (Same subject—chapter two).
Splitting the cataract surgical fee between ophthalmologist and optometrist has increased at least threefold between 1990 and 1992. Fee-splitting and kick-backs are illegal, of course. However, the question of an agreement about referral back is much less clear, particularly when an optometrist refers a patient with a fixed understanding about follow-up care. "In my book, it's fee-splitting—the only difference is that Medicare cuts the check," said Allan Jenkins, AAO Secretary for Federal Affairs. Dunbar Hoskins, AAO EVP, claims the issue has never been tested in court and remains a gray area. In typical legal-speak, the inspector general has stated, "This is not a gray area, but you can identify contradictions." Lisa Foley, senior counsel for the IG will propose a rule that would "protect arrangements...for specialty services in return for an agreement to refer that patient back at a certain time and under certain circumstances."

Did the Washington Medical Association meet the standard of care?
In the Pacific Northwest, the Washington State Medical Association has endorsed the Health Services Act, the legislature's plan which is seen as a prototype for the Clinton proposal. Yet when physicians were polled, three out of five opposed the act, seven of 10 believe the plan will reduce the quality of care and will limit patients' freedom to choose a physician, and 60% doubt the plan will control costs. Moreover, of the physicians who oppose the act, almost one-fourth said they will consider moving to another state, retiring, or will change careers. Since 80% of the survey respondents are members of the WMA, how did the program win support?

It is not enough to do good; one must do it the right way.
Our collective hats should be off to the members of the HMA and the HOS who worked so diligently and generously on our behalf during the recent legislative session. To provide funds to help is the easy way; to take time from one's practice and to endure hours of waiting to testify is a major sacrifice for one's profession.

This lab report was a hand grenade.
A man in Illinois suffered a coronary occlusion that caused him to take a different job with considerably less income. He sued his doctor for medical negligence because the physician did not discuss the significance of the blood cholesterol level of 324. The doctor merely sent the patient a copy of the lab report without counseling him on dietary changes. Expert witnesses testified at trial that the patient's high blood cholesterol was a proximate cause of the heart attack, and that the physician failed to meet the standard of care by not properly informing and advising the patient. The complaint was settled for $225,000.

Between the idea and the reality falls the shadow.
Perhaps soon with the addition of some state-of-the-art technology to the slit lamp, ophthalmologists may be able to measure and record cholesterol levels. SpectRx, Inc., an Atlanta medical technology company has exclusive rights to develop and market a technology that measures LDL and HDL cholesterol levels by shining a red light into the aqueous. Designed to replace the standard finger-stick or blood drawing tests, the technique provides almost instantaneous results. The company hopes to market the system in less than two years in stand-alone units or in diabetes detection and monitoring systems.

Our constitution protects aliens, drunks and senators.
Studies conducted in New York and Michigan reveal that when driving with a blood alcohol level of 0.10%—the legal limit—the motorist will be 10 times more likely to crash than a driver who has had no alcohol. Some states (not Hawaii) have lowered the legal level to 0.08%, which is still much higher than the rest of the world, eg Sweden 0.02%. AMA policy calls for a legal level of 0.05% for defining DUI.

If it ain't broke, don't break it!
The following is quoted from *The Senior American*. When asked to rate the quality of health care "you and your family now receive," 61% were very satisfied, 26% were somewhat satisfied—in other words, 87% gave good marks to their health care. Also, 60% did not think we are in a *major health crisis*, and a lopsided 97% of seniors think they will be hurt by Medicare payment cuts. Ninety-four percent say that more government control of health care is "bad," while 6% say it is "good."

Addenda
▲ Nothing is often a good thing to do, and always a clever thing to say.
▲ Anything hit with a big enough hammer will fall apart.
▲ Sex is hereditary. If your parents never had it, chances are you won't either.

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Medication-related claims are the second most common and second most expensive claims against physicians. Nationally, the average payment to patients in these cases is more than $120,000, and rising, according to the Physician Insurers Association of America.

MIEC conducts loss prevention seminars to help physicians and their office staff understand the causes of medication-related injuries and how to prevent them. Here are five of our recommedations for reducing patient injuries and malpractice claims:

1. **Use a medication control record in each patient's chart.**
2. **Take and document a complete medication and allergy history the first time you see a patient and periodically thereafter. Don't forget to ask about over the counter medications.**
3. **Help patients avoid improper medication use; provide them with written drug information.**
4. **Don't allow unlicensed office staff to prescribe drugs or to refill medications without your authorization.**
5. **Write legibly, and use accepted abbreviations and nomenclature.**

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OPTION 2

Your staff can enter patient registration and encounter information directly into HPAS's computer, over high-speed dedicated or dial-up phone lines, using one or more workstations that HPAS installs (or your existing PCs or Macs), and HPAS will do billing and collection for a flat percentage of total collections. This option is intended for practices with sufficient staff to do the data entry and want to have direct access to their data.

OPTION 3

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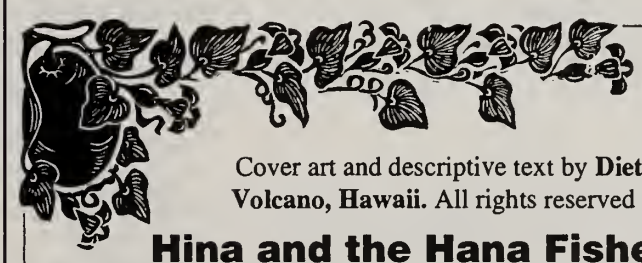
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Hina and the Hana Fishermen

The goddess Hina, her husband Ku'ula and their son 'Ai'ai were the appointed fisherfolk for Kahoali'i, the king of Hana, Maui.

One day the king sent his attendants to Hina's house to fetch some fresh fish. These attendants were jealous of Hina's household and returned to the king without fish. They invented lies and said Hina had insulted the king. Kahoali'i was furious and ordered his fisherfolk to be burned in their own home.

The warriors came and set the house on fire. Cleverly Hina placed three unripened gourds in the burning house. As the gourds exploded in the heat Hina and her family escaped.

Hina went to live in the sea with her husband Ku'ula, and their son went to live with a nearby friend. To avenge her family Hina caused all fish to disappear from Hana waters. Only when her son 'Ai'ai wove special fishtrap baskets according to her instructions did she fill his traps to overflowing. The fishermen of Hana, Maui have woven such traps or *hina'i* ever since.

Letter to the Editor

The *Journal* welcomes letters in good taste on any topic. All letters must be signed with the writer's correct signature and include the address and telephone number for our verification. Letters should be on a single subject and no longer than 200 words. Letters of any length may be trimmed.

Send to: Letters to the Editor, Hawaii Medical Journal, 1360 S. Beretania Street, Second Floor, Honolulu, HI 96814.

Dear Dr Goldstein:

Ever since it appeared, a number of physicians in Hawaii have strenuously objected to the annual ritual of signing the detested attestation required for privileges at all hospitals in the U.S.

The statement in which a physician is required to acknowledge that he will not falsify records or participate in other misconduct regarding care of his patients—not for the reasons that have guided physicians since the time of Hippocrates the welfare of the patient—but because of the threat of a federal fine or imprisonment, or both if he doesn't sign and abide by the required document every year. The previous administrator of HCFA, Gail Wilensky, refused to drop this requirement.

The persistence of Senator Inouye and his administrative assistant, Pat De Leon, has resulted in the changes in regulations that will eliminate this demeaning annual requirement.

Fred I. Gilbert Jr, MD

Mr Bruce C. Vladeck, Administrator
Health Care Financing Administration
Department of Health and Human Services
Washington, DC

Dear Mr Vladeck:

On behalf of Senator Inouye, who is currently away from the office, we are writing to express our enthusiastic support for the proposed modifications in your requirement for annual physician acknowledgement of physician attestation responsibilities in the March 9, 1994 Federal Register.

For a number of years, the Senator has suggested to the Health Care Financing Administration that this attestation requirement be deleted, and thus, having the acknowledgement statement be signed only at the time that a physician is granted admitting privileges at a hospital or before his or her first admission, rather than on an annual basis, is a very nice step toward that objective.

Aloha,
Patrick H. De Leon
Administrative Assistant

Health Care Financing Administration (HCFA)
Medicare Program.—Changes to the Requirement for Annual Physician Acknowledgement of Physician Attestation Responsibilites

Summary.—Existing Medicare regulations require a hospital to obtain, on an annual basis, from each attending physician, a signed acknowledgement that the physician understands the penalty for misrepresenting the information on an attestation statement relating to principal and secondary diagnoses and major procedures performed on patients. This final rule with comment period eliminates the requirement for an annual acknowledgement statement and instead requires that a physician sign an acknowledgement statement only on being granted admitting privileges at a hospital. The purpose of this change is to reduce the paperwork burden associated with processing claims under Medicare.

EffectiveDate.—This final rule is effective on April 18, 1994.

Reference

Rules and Regulations. *Federal Register.* March 9, 1994;59 46.

Mahalo to Dr Fred Gilbert and Senator Dan Inouye. We need less paperwork in medicine today—especially with health reforms on the horizon.

Norman Goldstein MD, Editor

Editorial Norman Goldstein MD

Health Reform and Special Issues

The *HMJ* editorial board had planned a special issue on health reform in Hawaii for December 1994. This political hot potato is so hot, and it's turning *huli-huli* so fast and so often, the daily newspapers are having a difficult time with the progress in Washington. We have decided not to have a special issue but leave the issues up to *Time*, *Newsweek*, CNN, and our newspapers.

The HMSA Foundation sponsored a well-attended program at the Hale Koa Hotel in July 1994. Local panel members included Richard Meiers, President and CEO of the Healthcare Association of Hawaii, Andy Don, HMA President, and Representative Julie Duldulao, chair of the House Health Committee.

Keynote speakers David Abernethy, staff director of the Senate Committee Health, House Committee on Ways and Means in the U.S. Congress spoke on "The View from the Hill." In addition to his "Seven Myths of Health Reform" he dropped several quotable quotes including:

"Health care is about a lot of things—but mostly it's about money."

"Cost containment is a very, very, very difficult political concept."

"There is no Health Fairy—someone has how to pay for it."

"The Senate? I don't understand the Senate—it's a foreign

place."

"Where are we going? I don't really know!"

"I'm very involved in the health reform process, and I don't know about what's going to happen!"

Clearly, the view from the Hill is not very clear!

We have planned three special issues. The September *Journal* will deal with "Women's Health" edited by Theresa Danao MD. In December we will devote a special issue to "Hawaiian Health—Hawaiian Medicine," edited by Chiyome Fukino MD. A new regular column will start in January 1995, and in April 1995 a special issue will feature "Medicine, Law and Bioethics." Dr S.Y. Tan, a physician and an attorney, will be our guest editor for the special issue and the regular column.

Norman Goldstein MD, Editor

Historical Notes

John A. Breinich
Hawaii Medical Library

With all the discussion today about health care reform, fee reimbursement, and costs, it is interesting to look back at earlier days in medicine and find that some issues were not really that different. At the April 7, 1906 meeting of the Hawaii Territorial Medical Society, there was a discussion of the rates reimbursed for medical examinations which led to the following resolution:

"Whereas certain life insurance companies have reduced the fee for medical examinations of candidates, when the policies are small, to two or three dollars, and whereas the members of the Society believe such seems to be inadequate remuneration; therefore be it resolved: That it is the sense of this meeting that no examination for life insurance be made for a sum less than five dollars, and be it further resolved: That the secretary make a transcript of this resolution and obtain thereto the signatures of all members of this Society who concur in such action and will give their support thereto, moved to pay bill for printing the (annual meeting) transactions by *Evening Bulletin*."

At the September 1, 1906 meeting, the Secretary drew up a set of new resolutions "in regard to the examination of applicants for life insurance for sum less than five dollars, and a penalty of expulsion from the Society be incorporated in said resolution and same forwarded to all insurance companies doing business in these islands."

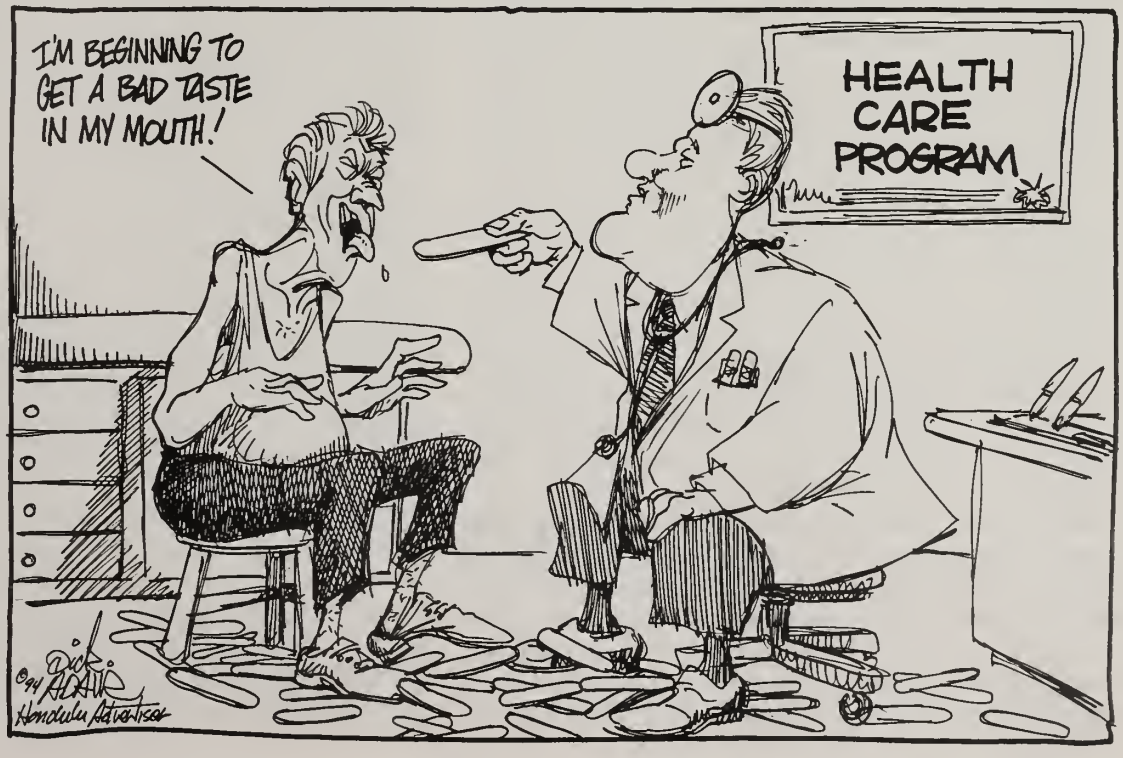
The October 6, 1906 meeting reaffirmed the position of the Society. At the November 3, 1906 meeting, "a communication was read from the Secretary of the Kentucky State Medical Society on the matter of insurance fees, which reported action by the said Society similar to that of this Society."

The matter continued at the February 2, 1907 meeting with another resolution: "Whereas certain insurance companies have requested that a receipt be given by the examining physician for insurance examinations for a sum less than that actually received from the insurance company, and, whereas this Society has no means of ascertaining for what purposes such a receipt may be applied, be it resolved that it is the sense of this Society that a receipt should not be given for a sum less than the fee paid by the insurance company and be it further resolved that any members of the Society giving a receipt for a sum less than the fee as received will be liable to expulsion from this Society."

May 4, 1907 meeting. "Letter received on insurance question from one of the agents asking Society to reconsider their decision in that matter. Society reaffirms its previous stand."

This was the last entry on the matter in the minutes of the Society so the issue seems to have ended.

This illustration was reprinted with permission by Honolulu Advertiser *editorial cartoonist Dick Adair.*



Medical School Hotline

John A. Burns School of Medicine
Judson J. MacNamara MD, Chair
Department of Surgery

The Department of Surgery's three major areas of endeavor are education, research and the delivery of health care.

Education.—Currently, the third year medical students are taught primarily in community health clinics instead of in the hospitals. This format has presented formidable challenges to all clinical specialists who have been accustomed to teaching their disciplines in hospital settings. Medical students now glean surgical education by following their patients who require surgical procedures from the respective community clinics through their surgery and post-operative course. For those who select surgery as a career, especially in their fourth year, advanced experiences are made available.

Also, substantial programmatic changes in resident education have been accomplished. An evaluation system now includes resident evaluations of attendings, attendings' evaluation of residents and residents' evaluations of the teaching hospital sites.

A course for residents in ethics has been initiated at St Francis Hospital and a similar program will begin at Straub Clinic and Hospital. In addition, a major revamping of the basic science education program has begun. This program places the residents in the position of directing their own learning with significant input from faculty. The clinical science education program on Saturday mornings, after Grand Rounds, will follow a similar format.

Finally, an advisor program has been implemented in which a resident meets quarterly with his or her advisor to evaluate the resident's progress and identify problem areas.

John George PhD is credited with the accomplishments in the area of education in the Department of Surgery. He, with the participation of the surgical faculty and staff, has been instrumental in guiding, organizing and promoting all of the education endeavors.

Research.—The surgical laboratory is currently on the eighth floor of University Tower. In spite of limited space and shrinking funds, the faculty and staff continue to expand their interest in research. In 1993 to 1994, eight scientific papers were presented at national meetings and 14 papers were published in peer-reviewed medical journals. Copies of these papers are available from the Department of Surgery.

Health Care.—The delivery of health care is focusing on two issues: The commitment to provide the best possible health care to Hawaii's indigent population, and the organization of the faculty into a multispecialty primary and tertiary care group. The issues are to make health care accessible to all at a substantially lower cost than is presently incurred.

The Department of Surgery continues to consider all of the above issues not as problems, but as challenges. The years ahead promise to be busy and exciting.

HMA Alliance

Susan L. Foo, President

It is with great pleasure and pride that I was able to represent Hawaii at the annual AMAA session in Chicago in June. I am delighted to announce that the HMAA won two national awards for AMA-ERF. Two Achievement Awards were presented to the HMA Alliance for the "Greatest Percentage Increase in AMA-ERF Contributions" and for the "Greatest Per Capita AMA-ERF Contributions." Much appreciation and kudos to the wonderful active Alliance Members who made this special recognition possible! The most ever presented in the 45+ year history of the HMA Alliance—$52,000—was donated to the John A. Burns School of Medicine this year. In addition, Hawaii was honored at the AMAA Membership reception for a significant increase in membership since last year. Nineteen ninety-four is truly a banner year for the HMA Alliance!

The following is the Hawaii annual report that was given to honor the accomplishments of the HMA Alliance Counties' projects. The mandatory two-minute presentation begins:

"Good morning ladies and gentlemen; welcome on board the Hawaii Medical Association Alliance flight No 101 bound for the beautiful islands of Kauai, Maui, Hawaii, and Oahu. Please fasten your seatbelts for the short flight to Lihue, Kauai—flight time 20 minutes from Honolulu. As we land at the airport, you will find that the Garden Isle of Kauai has miraculously blossomed again with lush vegetation after the devastating effects of Hurricane Iniki. The Kauai County Medical Auxiliary has purchased clothing, shoes, books, and school supplies for the children of Kauai. This morning we will be visiting the schools that have benefited from the generosity of the Kauai Medical Auxiliary.

Now we are off to Kahalui, Maui, for tennis and lunch, where we will participate in the annual tennis tournament to benefit AMA-ERF. This invigorating sporting event will raise more than $1,000.

Let's board our flight to Hilo, which will take us about 30 minutes. We're landing over the active Kilauea volcano, which is an awesome fiery sight! We are going to visit with the Hawaii County Medical Society Alliance, and will participate in their Moonlight Madness Fun Run. Let's put on our jogging shoes, join the fun, and help raise $2,500 for the American Cancer Society Hawaii Chapter.

After changing into our sequined evening gowns and tuxedos, let's hop on board the connecting flight to our final destination, Honolulu, Oahu, for the most exciting, gala, black-tie event sponsored by the Auxiliary to the Honolulu County Medical Society, "The Greatest Show in Hawaii!" This memorable event will feature, under the big top, daring acrobats and some of the finest illusionists in the state! The delightful Shriner's Clowns

will entertain us with their humorous antics. This truly magical evening will raise and pledge more than $100,000 to benefit the AMA-ERF Fund for the John A. Burns School of Medicine at the University of Hawaii.

We hope you have enjoyed this special day with us at the HMAA, and that you visit again soon. *Mahalo*, which means thank you, and *aloha,* which symbolizes love, hello, and goodbye."

HMA Council Highlights

The HMA Council meeting on June 3, 1994 was called to order at 5:35 pm by President Andrew Don. Members present were: Drs F. Holschuh, J. Spangler, C. Lehman, J. Chang, C. Kam, R. Stodd, A. Kunimoto, L. Howard, P. Blanchette, E. Bade, B. Shitamoto, R. Goodale, T. Smith, D. Canete, H.K.W. Chinn, W. Dang Jr, S. Hundahl, R. Kimura, M. Shirasu, C. Wong, G. Goto, J. Kim, J. Lumeng, J. McDonnell; and Alliance Representative Susan Wong. Staff members present were J. Won, B. Kendro, N. Jones, L. Tong, J. Asato, A. Rogness-recording secretary.

Dr Don reported that: 1) Mr Won will contact the AMA to see if they have a consultant who can do an organizational review of HMA's structure. 2) The Governor sent a letter to the HMA in appreciation of HMA's initiative with the QUEST program. The Governor's QUEST Advisory Board will consist of nominations from 12 organizations: The HMA, (Hawaii, Maui, Kauai, Honolulu, West Hawaii County Medical Societies), American Academy of Pediatrics-Hawaii Chapter, American College of Ob-Gyn Hawaii Chapter, Hawaii Federation of Physicians and Dentists, Hawaii Dental Association, Hawaii Nurses Association and Hawaii Primary Care Association.

The HMA Alliance: 1) Represented the HMA at the John A. Burns School of Medicine graduation on May 14 and presented an AMA-ERF check for $52,000 (proceeds from the Greatest Show in Hawaii) : 2) Met with Police Chief Nakamura to present a $1000 donation to the DARE program and 500 "Just Say No To Drugs" mugs, frisbees, and pens to reward the schoolchildren for their drug prevention efforts: 3) Presented a $1,000 donation to the American Heart Association Research Scholarship Fund.

The Hawaii County Medical Society Alliance: 1) Printed "Do not Drink and Drive" messages stuffed inside tuxedo pants for senior graduates to discourage them from drinking and driving; 2) Printed and distributed discharge pamphlets for new mothers at the Hilo Hospital. The booklet is filled with valuable information needed by the new mothers and the care of an infant. 3) Participated in the Great American Food-Fight Against Cancer with a demonstration table and prepared healthy and delicous salads for the public.

Actions

1) Council approved further investigation into a for-profit subsidiary corporation serving as a general partner in business ventures of approximately 26 investors.

2) Council approved that HMA go public with HMA's stand on Nurse Prescriptive Authority and that letters to the editor be sent to both Honolulu newspapers.

3) Council approved the following HMA election and campaign rules for the House of Delegates: a) The cost and production of any campaign materials must be borne by the candidate seeking office. HMA staff should not be requested to reproduce or distribute campaign materials or participate in the election process. b) Displays of campaign posters, signs and literature in public areas of the hotel where the annual meeting is being held are prohibited. An election table will be set up in the registration area for campaign literature. c) No campaign activities are allowed during HMA scientific sessions, luncheons, or dinners. d) Campaign materials may be displayed at campaign parties and distributed in the non-official business folder for members of the House of Delegates. All campaign materials or gifts to be distributed at the House must be presented to the speaker or vice-speaker by 9 am on the days of the House of Delegates meetings. E) Campaign gifts should be distributed only during the annual meeting and not mailed to delegates and alternate delegates in advance of the meeting.

4) Council approved that the Hyatt Regency Maui in Kaanapali be the site for the next annual meeting on October 5 to 8, 1995.

5) Council recommended that the Aloha Medical Mission's notice of a fund-raiser be placed in the *HMA Newsletter* and *HCMS Bulletin.*

6) Council approved the Membership Benefits Committee's recommendation of the Hertz Car Rental Discount Program.

7) Council approved the Membership Benefits Committee's recommendation of providing members and their staff with the Queen's Federal Credit Union's complete range of credit union services.

Component Society Reports

Honolulu.—President Leonard Howard reported that the Planning Committee for the Summit 2000 meeting met the morning of June 3 and has formed six committees. The committees are Administrative Cost Shifting, Information and Education, Cost Expectations, Human Resources, Medical Legal Issues: Alternative Dispute Resolution Mechanism, and Implementation. Dr Howard also reported that he and Mr Won made a presentation on May 12 to the Business Roundtable on HMA and HCMS opinion on health care reform and was well received.

Hawaii. —Dr Ernest Bade reported: 1) Dr Bernard Fong spoke at their last county meeting on May 31 about what's new in Medicare and what they will be observing in the state. 2) Hawaii County recruited about 10 new members. 3) A committee has been formed on QUEST and newsletters were sent frequently with updates.

Maui. —Dr Barry Shitamoto reported: 1) Dr Julia Frolich spoke at their last county meeting and gave an update on blood banking. 2) At their June 21 meeting Maui County will have a physician speaker on Alzheimer's disease. 3) The nominations for the Governor's Health QUEST Advisory Board have been submitted.

West Hawaii. —Dr Theresa Smith reported that their county had no meeting, however QUEST and the various health plans have been the discussion among physicians in West Hawaii.

For information

CME.—Dr DeMare clarified three major points: 1) the HCCME provisional accreditation status prohibits the HCCME from jointly sponsoring CME activities intended for both local and national audiences for a two-year period; 2) the HCCME advises those who are interested in presenting programs for a national audience seek joint sponsorship with an ACCME-accredited organization on the Mainland, noting that this arrangement is very difficult to obtain; and 3) the "HCCME Handbook" is available upon request.

AMA Patient Protection Act.—AMA launched an unprecedented initiative to gain Congressional support of the Patient Protection Act. The Act provides safeguards to help protect patients' interests and the physicians' role in health plans.

Legislative Issues.—The 1994 Hawaii State Legislative Session summary was mailed to physicians on June 2. Many bills were introduced to reform the Workers' Compensation system. This will be a hot legislative issue in 1995.

Reach Out Physician Initative Grant.—Mr Won reported that he and Ms Sharon Taba of the Medical Home Project were invited to Santa Monica to make a presention of their proposal of the Robert Wood Johnson Grant and to answer questions. HMA was one of the 30 chosen out of 1,000 applicants. Thirteen of the 30 proposals will be selected.

MBNA Mastercard Program.—Starting at the end of May, all existing and new accounts will not be subject to the annual fee. Employment-related HIV insurance will be provided to HMA cardholders at no charge.

Medical Savings Account

Several members have asked that the concept of a medical savings account be explained. The basic premise is that a medical savings account is an alternative to the present system of health insurance provided by employers.

How Does It Work?

Under a medical savings account plan, the employer would contribute tax-deductible monies to the employee's individual medical savings account. A part of the monies would be used to purchase a high-deductible health insurance policy for the employee and any dependents. The balance of the funds would be used to pay for eligible medical expenses of the employee, which would also apply toward the deductible of the health insurance policy. Payments for eligible medical expenses would be tax free.

Once the deductible is met, the health insurance policy would cover additional medical expenses of the employee. Any funds remaining at the end of the year could be withdrawn for personal use by the employee, but would be considered as income for tax purposes. Or remaining monies could be left in the account for future medical expenses.

For example, using the national average cost of $4,500 that employers currently pay for employee health insurance, this amount of $4,500 could be put into a medical savings account. Whatever the premium costs, for instance $1,500, would be used to purchase a health insurance policy with a high deductible. If the deductible were $3,000, and if $3,000 had been paid in medical expenses, the insurance policy would then pay the additional medical expenses. If the deductible had not been met, the balance could be used by the employee or left in the account to pay for future medical expenses.

"Patient Power"

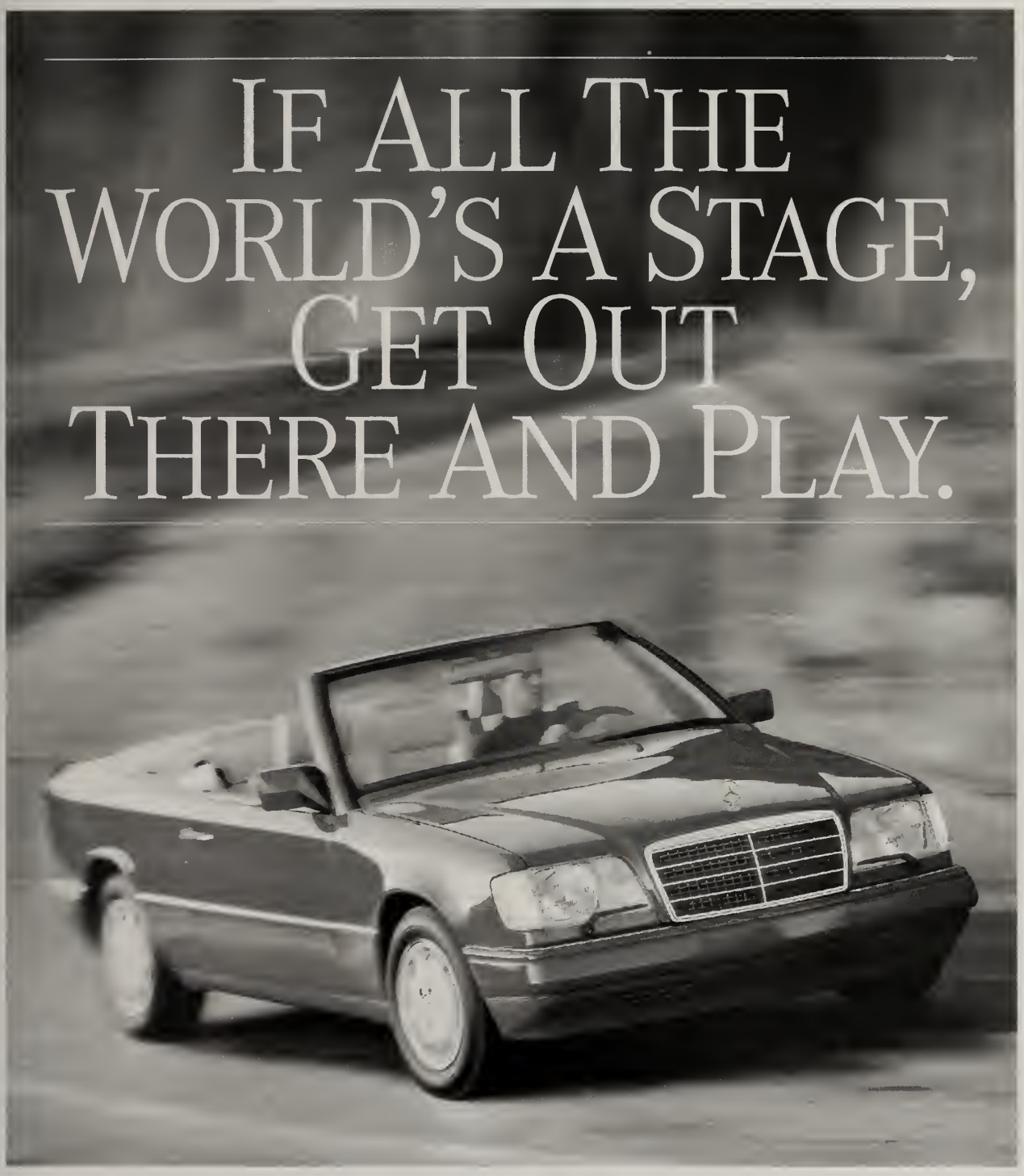
Dr Fred Reppun recently reviewed a booklet entitled "Patient Power," released by the Cato Institute, and Dr Reppun says the booklet impressed him enough to change his thinking on health system reform. He was adamant that he did not change his mind about certain principles. However, many of these nonnegotiable tenets are unchanged in the MSA proposal.

- The MSA proposal preserves the doctor-patient relationship, and the relationship of both to the hospital.
- Coverage by insurance is relegated to its proper role—as pure insurance, purchased by the individual, by his or her employer, or by the government as a needed subsidy and primarily to help in the event a medical catastrophe occurred, or toward long-term care, retirement, and as the patient chooses within the limits.
- The MSA proposal will not upset the current 85% of Americans who enjoy good coverage by insurance; it will make it easier for them to adopt MSAs if they choose, and it will ease the load on employers and on the government.
- Physicians and their patients can work together to mutual benefit and to control costs; physicians can return to being their patients' medical advocates and advisers, and may choose to serve only the one boss, or even be comfortable in an HMO, IPA, etc.
- The government might find it much cheaper under the MSA system to eliminate the expensive bureaucracy and administration, and to subsidize the medical care of the gap group; the latter group will then be the only problem remaining, particularly that small cohort of people who do not wish to be responsible for their own health care.

Dr Reppun says the authors of "Patient Power" seem to have done a lot of research to back up the facts they present:

- "Patients pay only 5 cents out of pocket for every dollar they spend on hospitals; the remainder is paid by private and public health insurance...[they] pay less than 19 cents for physicians' services...a total of 24 cents on the average for all health care."
- "The U.S. is the only country in the world where people can consume medical care almost without limit, unconstrained by market prices or by government rationing."
- "The choice of whether to spend money on health care instead of for other goods and services can be up to either the patient or up to the health care bureaucracy that is ultimately answerable to the government."
- "In any given year, only about 4% of the population requires access to the most modern of medical technologies. Canada has

➤ *Continued on Page 224*



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Parents' Reporting of Symptoms in Their Children: Physicians' Perceptions

Mary S. Sheridan PhD, ACSW

Pediatricians and family practitioners were asked how accurately parents report young children's symptoms. They believe 5% conceal/fail to report, 8% minimize, 80% report accurately, 10% exaggerate, and 1% falsely report/induce symptoms. They report fewer puzzling cases in their own practices than these estimates would suggest. Health professionals should know the warning signs of Munchausen syndrome by proxy.

Introduction

Munchausen syndrome by proxy (MBP), or factitious disorder by proxy, is the non-accidental production or reporting by a caretaker of symptoms in a child, usually under 5 years old. It is a form of child abuse. MBP is not a diagnostic entity recognized in the *Diagnostic and Statistical Manual of Mental Disorders,*[1] but will be included in the new DSM IV (in press) as a variant of factitious disorder according to C. Jones of the American Psychiatric Association. It will have the following definition and criteria:

A. Production or feigning of physical signs or symptoms in another person who is under the individual's care.

B. The motivation for the perpetrator's behavior is a psychological need to assume the sick role (indirectly) as evidenced by the absence of external incentives for the behavior, such as financial gain.

MBP was first identified by S. Roy Meadow of Leeds, England.[2-3] Typically, a caregiver (most often the mother) repeatedly brings the victim to a doctor or hospital, reporting symptoms which cannot be ignored. In more malignant cases, the caretaker is inducing symptoms through mechanisms such as suffocation or poisoning, not simply making false reports. Over time a pattern emerges. Symptoms occur or are reported only in the presence of a single person, and they resolve when the victim is separated from that person. Recognizing MBP can be difficult, since diagnosis of true physical illness is not always straightforward, and the prospect of falsely blaming a parent is daunting.

Health care professionals generally believe parents' reports, and MBP parents are often ingratiating and convincing. It can be easier for medical staff to pursue the possibility of a rare disorder than to believe that an apparently exemplary parent is, in fact, a child abuser. So the child continues to be tested and treated. For this reason, MBP has been called an interactive process between families and health care professionals.[4]

MBP is expensive to the health care and child protective communities and dangerous to children, although its full extent is unknown. Light and Sheridan[5] found that, among 24 infants with apnea that probably represented MBP, only one had not been rehospitalized. Five had been readmitted 5 times or more. Eight required 1 to 4 ambulance calls, and 7 had ambulance calls 5 or more times—a few almost daily. Eleven of 32 total patients in this study had been reported to child protective agencies, and 5 had at some point been placed in foster care. Three of the patients identified in this study were dead, and 1 had severe brain damage from abuse. Five of their siblings were known to be dead, supposedly the result of sudden infant death syndrome.

In his review of 27 well-substantiated MBP suffocations, Meadow[6] found that 9 of the index cases and 18 of their 33 siblings were dead. Bools et al[7] reported that 64% of 56 index children had more than one illness fabricated, and 29% had a history of failure to thrive, non-accidental injury, or neglect. Eleven percent of their siblings were dead, and 39% of their siblings also had fabricated illnesses. Even if symptoms are only reported and not induced, the children's lives revolve around a parent's need for them to be sick. There is some suggestion that they respond with behavioral and psychological pathology, perhaps eventually creating illness in themselves and their own children.[8]

Little is known about the epidemiology of MBP. Light and Sheridan estimated that 2.7/1000 infants on apnea monitors might be victims. Kaufman et al[9] found that 86 professionals attending a child abuse conference had seen 77 possible cases in the previous year. Schreier and Libow[10] surveyed 870 pediatric neurologists (22% response rate) and 388 pediatric gastroenterologists (32% response rate) and uncovered "465 cases, of which 273 were confirmed and 192 seriously suspected." They concluded, "there may be large numbers of Munchausen by proxy cases, and...many of them are not being diagnosed."

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One obstacle to the diagnosis of MBP is failure of health care professionals to recognize it. This comes from 3 major sources:

1. Lack of knowledge about the syndrome.
2. The convincing presentation of illness by perpetrators.
3. Reluctance to confront child abuse and/or the fact that one has been deceived.

Since MBP was not recognized until 1977, has been considered rare, and has not received wide publicity until recently, many professionals have not had an opportunity to learn about it. Kaufman et al[11] surveyed 86 professionals attending a child abuse conference and found that only 50% overall had heard of MBP prior to attending the conference. (Eighty-six percent of those working in medical settings had heard of it, compared to only 24% of those working in community agencies.) Ostfeld et al[12] surveyed 92 professionals and found that, while 93% of pediatric residents were aware of the disorder, only 44% of family practitioners and 43% of social workers knew about it.

Methods

In 1992, pediatricians and family practitioners were surveyed to determine how accurately they believed parents reported symptoms in their young children, and whether they had any patients "who have recurrent or prolonged symptoms of illness which, after extensive testing, remain puzzling." Young children (defined as under age 5) were targeted because the literature suggests that MBP is more frequent in this age group, since they cannot as easily contradict their parents' reports. The survey focused on reporting of symptoms rather than MBP to avoid possible bias. It asked for a continuum of symptom reporting, from concealment through accuracy to exaggeration, because of the author's ongoing interest in this area[13] and because relatively little is known about under-reporting of symptoms.

The definition quoted was used as a basic screen for possible MBP. It is recognized that many cases *not* factitious in origin might fit that definition, either permanently or transiently. However, in the author's opinion, when looking for a pool of potential MBP cases, start with patients so described. In addition to the pre-printed questions, physicians were asked to add any comments they chose to the response form, and those who had patients who fit the screen for MBP were asked whether they would be willing to discuss these patients further "with proper protection for confidentiality." It was hoped that this would yield a group of patients appropriate for further study, in order to test out the brief definition.

The survey was mailed to 131 pediatricians and family practitioners (those listed in the Oahu Yellow Pages) accompanied by a postpaid return envelope. Forty-two responses were received (10 from family practitioners, 31 from pediatricians, and 1 that could not be identified), for an overall response rate of 32.8%.

Results

The data on parental reporting of symptoms is shown in Table 1. In general, respondents believed that most parents report symptoms accurately. They agreed that parents are more likely to conceal relevant symptoms than to induce them or report falsely. Family practitioners appear more likely to take parents' statements at face value than pediatricians, but this difference is not significant. Two respondents, both pediatricians, wrote comments. One pointed out that the quality of history-taking by the physician has a great influence on the information obtained. The other wrote a statement with which most physicians would probably agree: "Mothers who are insecure tend to exaggerate symptoms more. The ones who minimize symptoms are usually ignorant of the complications or sequelae of diseases and thus are *crisis oriented* and only seek help when it is absolutely necessary."

Table 1.— Symptom Reporting by Parents

Accuracy	Total	Peds	Fam Prac
What percent of parents, for any reason:			
Do not report/ conceal symptoms which you feel are important	5%	6%	4%
Minimize or "play down" symptoms	8%	9%	5%
Exaggerate or over interpret	10%	14%	7%
Falsely report or induce symptoms	1%	2%	1%

Note: Responses do not total 100% because some respondents' answers did not total 100%.

The physicians guessed that at least 1% of parents either falsely report symptoms or induce them—the essence of MBP. As part of the questionnaire's introduction, respondents were asked for an estimate of how many children under 5 years of age they cared for on a regular basis. The pediatricians averaged 852 young patients and the family practitioners 354. Extrapolating to all respondents, the total number of patients cared for by physicians answering the survey is estimated at 30,510.

However, there were only about 67,000 children under age 5 on Oahu in 1990, the latest year for which statistics are available, suggesting that physician practice estimates were inaccurate or that patients "doctor shop" more than physicians realize.[14] One percent of this number is 305, which could be taken as a gross estimate of patients about whom suspicions of MBP could be raised among this cohort of physicians. Yet, when asked in the next question, whether they had any patients with recurrent, puzzling symptoms, the physicians reported just over a tenth of this number (35). (Note that some respondents gave the response of "a few," which could not be quantified.) When those with such cases were asked if they would be willing to discuss them further, only 3/10 who admitted having such cases were interested in consultation. One additional pediatrician planned to send the child on to a specialist if the current therapeutic strategy was not successful.

➤ *Continued on Page 221*

Diffuse Venous Malformation with Intraosseous Involvement

Curt P. Samlaska MD, FACP, Joseph A. Gagliardi MD

A young boy with a large venous malformation of his left arm and hand was evaluated for Maffucci's syndrome. Initial hand films were remarkable for cystic bony lesions suggestive of enchondromas. Additional roentgenograms and magnetic resonance imaging studies showed the bony abnormalities were the result of a venous malformation infiltrating bone. Magnetic resonance imaging is a useful diagnostic tool in differentiating enchondromas from vascular anomalies. Venous malformations infiltrating bone should be included in the differential diagnosis of Maffucci's syndrome.

Skeletal angiomas comprise less than 1% of all bony lesions and predominantly afflict women during the fifth decade of life.[1-3] There is a predilection for involvement of the vertebra and skull (75%).[4] Angiomas of long bones occur less than 10% of the time and have a higher association with soft tissue cavernous component than other sites.[1-4] Although the roentgenographic findings of angiomas in the skull, spine and flat bones are often characteristic, involvement of long bones may lack these features and present a diagnostic challenge.[5] This is particularly true for the congenital syndromes such as Klippel-Trenaunay-Weber syndrome and Maffucci's syndrome where skeletal angiomatosis have been reported to be associated with both conditions.[1,6] This is an account of a diffuse venous malformation with intraosseous involvement, which on clinical examination and initial hand films was suggestive of early Maffucci's syndrome.

Introduction

A 13-year-old Caucasian male came to the dermatology clinic for information on congenital hemangiomas. Shortly after birth the patient developed matted telangiectasias involving the left shoulder and arm. During his childhood years the sites evolved into large subcutaneous masses extending from the left shoulder to the tip of his thumb. Therapeutic attempts at wrapping the arm were unsuccessful. More recently he noted increased frequency and severity of his limb pain. In addition, the patient experienced a midshaft radial fracture and distal ulnar fracture with minimal trauma to the left arm.

The physical examination revealed the left arm had large bluish subcutaneous masses extending from the biceps region to the tip of the thumb (Fig 1). The left shoulder had patches of matted blue varicosities and telangiectasias. There was no limb length discrepancy or evidence of other sites of cutaneous involvement.

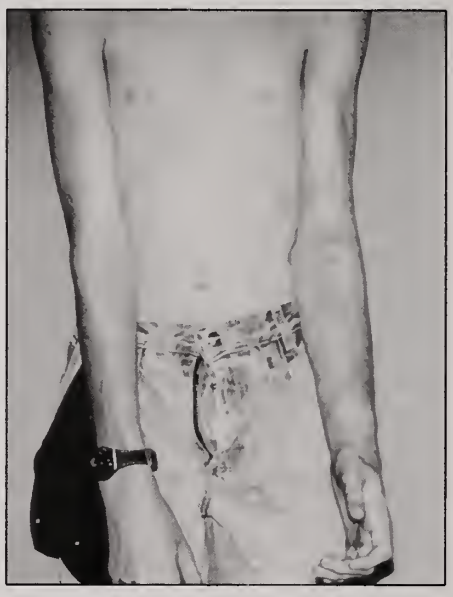


Fig 1.—Vascular anomaly extending from the left shoulder to thumb.

Bilateral hand films demonstrated radiolucent defects involving the metadiaphyseal portions of the first 3 metacarpals of the left hand (Fig 2); phleboliths were present. Roentgenograms of the left forearm showed thinned and slightly expanded cortices without periosteal reaction or fracture, involving the distal humerus, radius, and ulna. The metaphysis and diaphysis were unusually coarse and had a honeycombed appearance (Fig 3).

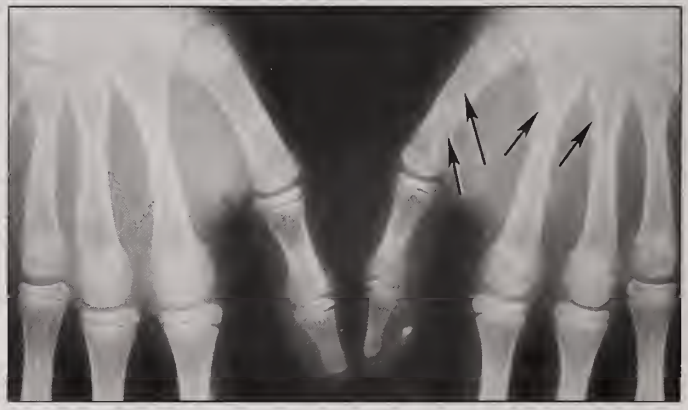


Fig 2.—Roentgenogram demonstrating cortical thinning and expansion of the metadiaphyseal portions of the first 3 metacarpals (arrows) of the left hand. A soft tissue calcification consistent with a phlebolith is adjacent to the distal phalanx of the thumb.

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The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.



Fig 3.—Plain film with 2 views of the left forearm demonstrate multiple rounded calcifications (phleboliths) scattered throughout the soft tissues. The distal humerus, the radius and ulna have thinned and slightly expanded cortices without periosteal reaction or fracture.

Magnetic Resonance Imaging

T1-weighted (TR/TE 400/14), proton density (TR/TE 1650/14) and T2-weighted (TR/TE 1650/80) images were obtained with 5-mm thick slices (Fig 4A-C). The cortical bone in the first 3 metacarpals was abnormally expanded and scalloped by a low signal intensity lesion on the T1-weighted images (Fig 4A) that increased significantly on the proton density (Fig 4B) and T2-weighted images (Fig 4C arrows). Similar abnormalities were present in the surrounding fascial planes, muscle, and subcutaneous tissue.

Additional images of the left hand and forearm were obtained using Gadolinium-DTPA (Gd-DTPA) contrast enhancement to evaluate the suspected vascular nature of the skeletal and soft tissue angiomatosis. T1-weighted (TR/TE 400/14) images with Gd-DTPA of the forearm (Fig 5) showed marked abnormal contrast enhancement throughout the extensor muscles surrounding the radius as well as within the flexor muscles anteriorly. Contrast enhancement also was present in the cortically based bone lesions. These results confirm the presence of a low-flow venous malformation infiltrating soft tissue and bone.

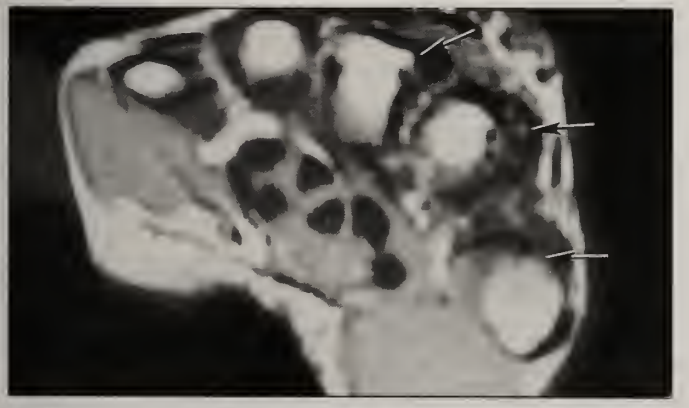


Fig 4A,B,C.—A) Magnetic resonance imaging with T1; B) proton density; C) T2 weighted sequences. The majority of the marrow fat is preserved in the metacarpals; however, abnormal low signal lesions were detected on T1 that increased in intensity on both proton density and T2-weighted images in the first 3 metacarpals (arrows). All 3 appeared to have the epicenter in the cortex with only minimal marrow involvement. The same signal abnormalities were also present in the soft tissue surrounding the affected metacarpals.

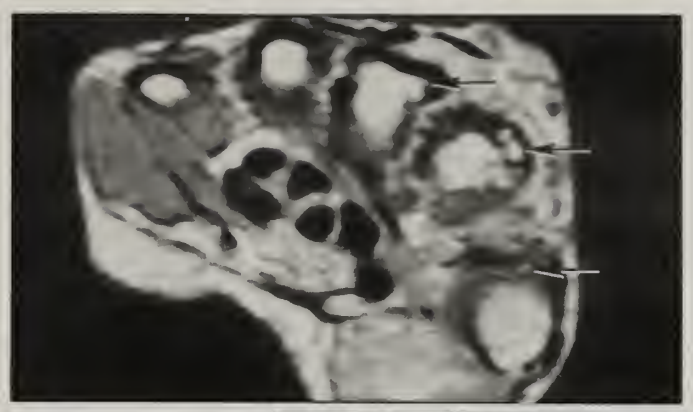


Fig 4B.—Above.
Fig 4C.—Right



Discussion

Nomenclature for vascular birthmarks is complicated by many years of confusing descriptions and classification schemes that do not correlate with clinical outcomes. For example, the word *hemangioma* has become a generic term used to describe a diverse group of vascular lesions regardless of etiology or natural history.[7] Descriptive, anatomicopathological, embryological and biological classification schemes have been proposed.[7-9] The system most commonly accepted by authors in the field today combines cellular features with clinical behavior.[7,8] There are 2 main categories: hemangioma and malformations. *Hemangioma* is limited to vascular lesions that show increased endothelial mitotic activity, a biphasic growth pattern and subsequent regression. *Malformations* are defined as vascular lesions with normal endothelial mitotic activity and fail to show regression.[9] Malformations may contain arterial, venous, capillary or lymphatic elements. The histologic term "cavernous" is confusing and has been applied to vascular lesions which may or may not involute. Mulliken[7] suggests that the term is not useful and should be avoided in the discussion of vascular anomalies.

Maffucci's syndrome is characterized by subcutaneous vascular anomalies, enchondromas and a 15% risk of developing chondrosarcomas.[9] The enchondromas most commonly involve the metacarpal and phalangeal bones, and on roentgenograms often demonstrate oval, radiolucent defects associated with expansion and cortical thinning. In this patient the detection of phleboliths suggests a low flow venous anomaly. Hand films showed small radiolucent defects and the diagnosis of Maffucci's syndrome was considered. However, roentgenograms of the forearm demonstrated coarse and honeycombed changes involving the metaphysis and diaphysis of the radius and ulna; these findings were suggestive of an intraosseous malformation. Mag-

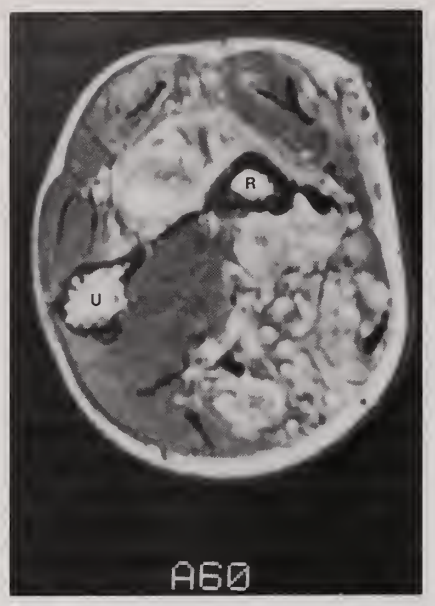


Fig 5.—Magnetic resonance imaging of the forearm with Gadolinium-DPTA enhancement. There is marked enhancement throughout the extensor muscles surrounding the radius and penetrating the flexor muscles anteriorly. Contrast enhancement is present in the cortically based bone lesions of the ulna (U) and radius (R) consistent with a large infiltrating venous malformation.

netic resonance imaging has become an important modality in defining the extent and rate of flow in hemangiomas and arteriovenous, venous, lymphatic and lymphaticovenous malformations.[10,11] Venous malformations demonstrate slow flow on Gadolinium-DTPA enhancement (T1-weighted images only), filling defects, and enhancement on T1-and T2-weighted images.[6,7] Arteriovenous malformations show high flow rates and lymphatic malformations fail to show enhancement on magnetic resonance imaging. Lymphaticovenous malformations show focal areas of enhancement. Without evidence of a tumor mass biopsy is not required to confirm the diagnosis.[10] Thus, based on Mulliken's classification scheme, this patient has a diffuse venous malformation involving the left arm with intraosseous infiltration.

Vascular anomalies involving bone are rare; however, several specific clinical entities have been defined to include cystic angiomatosis, neonatal hemangiomatosis, Gorham's syndrome and Klippel-Trenaunay-Weber syndrome. Subcutaneous vascular malformations rarely cause radiographic changes within adjacent long bones.[12-16] Most cases presented with local pain and/or swelling. Roentgenographic findings are varied and may include: 1) Cystic osteolytic lesions, 2) "soap-bubble" or "honeycombed" medullary trabecular network, 3) expanded cortex, 4) irregular cortical thickening and peripheral sclerosis, 5) calcified mass, 6) osteolysis with soft-tissue invasion and 7) normal studies.[1,4,12-16] The differential diagnosis includes osteoid osteoma, chondrosarcoma, fibrosarcoma, malignant fibrous histiocytoma, primary lymphoma, vascular neoplasms, metastatic disease, plasmacytoma, histiocytosis X, epidermoid cysts, glomus tumors, enchondroma, lipoma, neurofibroma and osteomyelitis.[1,4,14-17]

Cystic angiomatosis of bone is characterized by osteolytic lesions (single, multiple or diffuse) with minimal cortical erosion on roentgenograms.[12,18-21] Osseous disease may be found at virtually any site; however, the most frequently reported areas are the spine, skull, pelvis, and ribs.[18] Most patients are asymptomatic and detection often is incidental with routine roentgenographic examinations.[18-22] Reid et al[18] reported a series of familial cystic angiomatosis inherited in an autosomal dominant fashion with a predilection for peripheral skeletal involvement. Pancytopenia and coagulation disorders have been associated with severe skeletal disease.[20] Some authors have reported "systemic cystic angiomatosis" involving multiple organ systems, other than bone, based on a "cystic" appearance on ultrasound or gross observation.[21] We suggest that the term cystic angiomatosis be restricted to those cases with predominantly skeletal disease; although 50% of the patients have been reported to have concomitant extraskeletal angiomas, the overriding feature is marked skeletal involvement.[18]

Neonatal angiomatosis has been divided into 2 subtypes.[9,23,24] The development of multiple cutaneous lesions with life-threatening multisystem involvement has been called diffuse or disseminated neonatal hemangiomatosis.[7,9,23,24] Children with widespread cutaneous lesions with minimal or asymptomatic visceral involvement have been classified as benign neonatal hemangiomatosis (do not require intervention).[9,23] Diffuse neonatal hemangiomatosis most commonly affects the skin, liver, lungs, gastrointestinal tract, and central nervous system.[9,24] Skeletal involvement has been reported, but is extremely rare.[24]

Gorham's syndrome, also known as phantom bone, massive osteolysis, acute spontaneous resorption of bone, disappearing bone, cryptogenic osteolysis, spontaneous absorption of bone and progressive atrophy of bone, is characterized by progressive osteolysis extending across joint spaces to involve contiguous bones.[9,14,25] More than 100 cases have been reported in the world literature, and the most frequent cause of death is respiratory complications due to lysis of the thoracic cage.[14,25] Skeletal involvement is usually monocentric and the most frequent sites of involvement are the mandible, ribs, scapula, femur, and humerus.[25] Roentgenographic changes in early stages resemble osteoporosis with intramedullary and subcortical lucency.[25] More advanced cases demonstrate tapering of the involved long bones similar to a licked stick of candy followed by complete absorption. Bone biopsies demonstrate histologically benign vascular channels with fibrosis and replacement of the normal bony architecture. Long-standing lesions develop progressive fibrosis infiltrating into adjacent soft tissue, although cutaneous angiomas have been reported at the onset.[8,25]

Klippel-Trenaunay-Weber syndrome (including Parkes-Weber variant with the addition of and arteriovenous fistulae) is characterized by cutaneous vascular lesions, venous varicosities and hypertrophy of soft tissue and bones.[9] The lower limb is most often involved in a unilateral distribution. Soft tissue and skeletal hypertrophy is believed to be secondary to increased vascular perfusion. In contrast to the hypertrophy observed in arteriovenous fistulas, patients with venous anomalies involving skeletal bones are usually normal or hypoplastic.[26] Limb hypertrophy and intraosseous involvement also has been reported with lymphatic malformations.

Detection of phleboliths on radiographs is suggestive of low flow venous anomalies and can be a significant finding in venous malformations, Maffucci's syndrome, and arteriovenous malformations.[27-28] To differentiate between these various disor-

ders additional studies are required. Arteriography, phlebography and arthrography are not recommended for children and often do not provide adequate therapeutic information.[26] Noninvasive, painless techniques for evaluation of vascular anomalies include sonography, Doppler, color Doppler, CT scans and MRI. MRI studies in patients with suspected venous malformations are superior to other studies due to the clear delineation of skin, muscle, joint and bone involvement.[26] In addition, with use of Gadolinium-DTPA, flow rates throughout the malformation can be determined.

Prognosis and therapeutic intervention is different for the various forms of vascular anomalies and vascular syndromes. In this patient it was important to exclude Maffucci's syndrome because of the increased risk of developing chondrosarcomas.[9] Individuals with arteriovenous malformations can develop pseudo-Kaposi sarcomatous skin changes, skin ulcerations, increased cardiac output and even congestive heart failure.[26] Arteriovenous malformations usually are dormant during childhood.[26] Patients who have venous malformations involving a limb complain of pain and swelling often related to vascular thrombosis.[26] Joint effusions and hemarthrosis are a consequence of vascular infiltration. Massive intraosseous disease of long bones also results in decreased bone density and increased risk of fracture, as demonstrated by this case.

Treatment of venous malformations is difficult and often unsuccessful. External support through the use of custom-made elastic stockings or wraps is indispensable and should be encouraged on a lifelong basis. If well circumscribed the patient may experience some therapeutic benefit from percutaneous sclerotherapy under fluoroscopy and surgical excision of venous pouches.[26] If knee hemarthrosis is not treated with synovectomy and surgical removal, flexion contractures, leg muscle atrophy, equinous deformity of the foot and progressive ankylosis of the joint may ensue.[26] The increased risk of fracture in this patient required us to provide him with a molded orthoplast arm guard secured with velcro straps.

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Parents' Reporting of Symptoms in Their Children: Physicians' Perceptions

➤ *(Continued from Page 217)*

Discussion

This survey was not designed to establish definitively the incidence of accurate or inaccurate reporting among parents, but rather to tap the perceptions of those who work most closely with children's illnesses. Survey results suggest that physicians are aware of the potential for both under- and over-reporting, and believe in the abstract that these form a rough normal curve. However, they do not report an equivalent number of puzzling cases in their own practices. Perhaps they are aware of those parents within their practice who falsely report/induce symptoms, or perhaps they do not believe that parents in their practice are typical. Induction of symptoms, if not persistent false reporting, is clearly child abuse. It is noted by S. Choy, Director of the Multidisciplinary Child Protective Team at Kapiolani Medical Center for Women and Children that Hawaii Child Protective Services has received fewer than 5 total reports of MBP.

The reluctance of respondents to discuss their puzzling patients is unclear. Perhaps they simply did not wish to share these cases with the author, who is not a physician, or did not feel that confidentiality could be properly safeguarded in such a discussion. Perhaps, as one indicated, they have management strategies and resources already in place. It is also possible that they are reluctant to face the implications of MBP—a personally stressful process in addition to its legal implications.[15]

It is recommended that physicians, together with other health and social services professionals, be aware of MBP. Knowledge in the abstract, however, like awareness of other forms of child abuse, is not enough. By their own estimates, approximately 1% of respondents' patients may have parents who frankly lie about

or induce symptoms. Practitioners should make sure they are translating their theoretical knowledge into proper awareness and safeguards for young children.

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Or fax your request to (202) 682-6255

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OVER 50 HAD REGULAR

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THEIR DEATH RATE

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FROM BREAST CANCER

for every woman over 50—

WOULD DROP

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Hawaii Consortium for Continuing Medical Education

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John A. Burns School of Medicine,
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138th Annual Scientific Meeting
Hawaii Medical Association

October 6-9, 1994

The Ritz-Carlton Mauna Lani
Island of Hawaii

Women have been identified as a population with a range of health needs and potential health problems that are not consistently being identified and addressed. Nationally, physicians and other providers are taking note of this expanding patient population and are realizing the lack of attention being paid to their total health needs.

Women over 50 have been identified as the fastest growing segment of the U. S. population. Forty-two million women are now over age 50 in the United States and that number will double in the next 12 years. Current life expectancy of women is 81 years.

Research has shown women to be episodic users of the healthcare system, often because of conflicting responsibilities for work, children and aging parents. Women are often the major decision makers in their families, selecting their own providers as well as those of their husbands, children and parents.

Caring for women requires comprehensive knowledge in medicine, gynecology, endocrinology, and psychiatry. Designed for the practicing physician, this course on Women's Health will provide participants with a series of lectures with broad exposure to important advances in research and clinical practice relevant to the care of women. At the conclusion of the program, the participant will be better able to:

- Identify the benefits of hormone replacement therapy
- Use new techniques for obtaining Pap smear specimens and interpreting test results
- Recognize new contraception options
- Evaluate abdominal pain with new technology
- Screen, diagnose and manage breast cancer
- Help counsel women regarding breast reconstruction surgery options
- Review data and treatment alternatives for cardiovascular disease in women
- Focus on the cause and prevention of stroke in women
- Identify signs of domestic violence and understand the physician's role in stopping the cycle

Featuring outstanding Mainland and local speakers, the program will be held on:
October 7 - 8:25 am - 12:00 pm, Ob-Gyn Update
October 8 - 8:25 am - 12:00 pm, Medical and Surgical Issues in Women's Health
October 9 - 8:15 am - 10:30 am, Domestic Violence . . . Too Close to Home

ACCREDITATION

The Hawaii Consortium for Continuing Medical Education is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

The Hawaii Consortium for Continuing Medical Education designates this continuing medical education activity for 8.0 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association.

Don't miss this weekend on the Island of Hawaii. It will include world-class hotel accommodations at the beautiful Ritz-Carlton Mauna Lani, golf and tennis tournaments, exhibits, and more.

For a complete program, please contact the Hawaii Medical Association, (808) 536-7702.



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Medical Savings Account
➤ *(Continued from Page 214)*

only 11 facilities for open heart surgery versus 793 in the U.S."

- "The key to Patient Power is a Medical Savings Account: Tax-deferred accounts set up to pay for routine small medical care and to allow savings to accumulate with which to finance major medical expenses in the future, directly or through the purchase of insurance against medical catastrophes."
- "The authors describe the current medical insurance coverage for hospitals and doctors as *cost plus*, meaning the insurers pay whatever the provider charges as his or her cost plus a bit more, ie, ideally a responsible profit as an incentive to provide adequate service. Then this rewards providers who are eager to purchase the newest technologies. Charges go up, insurers pay more and pass the increase on to the consumers by raising the premiums. The consumer has no incentive to shop for something cheaper because he or she believes 'my insurance will pay for it,' forgetting that the 20% of the premium paid by the consumer will be higher too."
- "In ordering tests and prescribing treatment, physicians generally have little or no idea as to the costs; their primary concerns are for the welfare of the patient."
- "The cost plus system naturally generates cost controls; consequently, quality of care suffers."

Dr Reppun says this booklet reveals a way to return as closely as possible to the basic doctor-patient relationship, a contract between the two. This is a major change from the system that has been evolving the past 50 years or so in which the contract has been between the two bureaucracies—the insurance industry and the government—both interfering with the patient and the healer in their relationship with each other.

If we do away with alliances, plans and employer mandates, life could become much easier for our society and universal access could be accomplished.

Reference

1. Goodman JC, Musgrave GL. *Patient Power*. Ann Arbor, Mich: Cato Institute; 1994.

Classified Notices

To place a classified notice:
HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Wanted

Internist for Oahu, Hawaii. Diagnoses and treats diseases and injuries of human internal organ systems. Require MD, 3 yrs. training as a Resident in Internal Medicine, and must be licensed to practice medicine in the State of Hawaii. Must be able to be on call at night on a rotation schedule. Must be able to speak English and fluent Mandarin and Cantonese as 60% of patients are Chinese who speak only Mandarin and Cantonese. Supervises 4employees. 50hrs/wk. 8 am -6 pm. Salary: $90,265 A year. Submit resume to Hawaii State Employment Service, Honolulu Office, 830 Punchbowl Street, Rm 112, Honolulu, HI 96813. Refer to job order No 0344016. An Equal Employment Opportunity Employer.

Part-time physician. The Honolulu Military Entrance Processing Station needs a physician to do medical exams on applicants for the Armed Forces. MD or DO. Any specialty. Must have valid license. No malpractice insurance needed. Ideal for retired physician. Please call John Kustermann MD at 541-2997/2580.

PACE Hawaii at Maluhia, a new and innovative approach in caring for Hawaii's elderly, is seeking a physician, 20 to 40 hours, to join its dynamic team. Experience in geriatric or internal medicine/family practice preferred. Position to be filled immediately. Send resume or call: PACE Director, 1027 Hala Drive, Honolulu, HI 96817; (808) 832-6114.

Licensed MD needed to conduct physicals for insurance industry. Flexible hrs. We provide supplies needed. Must have own transportation, malpractice insurance. Call Equifax/PMI (808) 531-2244.

Medical Executive Director. Sets vision and philosophy of health care delivery for Molokai General Hospital/Molokai Health Systems. Provides leadership and vision to Molokai General Hospital/Molokai Health Systems to be a community-based, primary-care driven, fully integrated health care system. Identifies, evaluates, expands, adjusts, and sets priorities for present resources to meet community health needs, maintain part-time patient practice. **Requires:** HI licensed physician, board-certified in a primary care field (preferably family practice) or the equivalent of 5 years of demonstrated exper. in a primary care field, ACLS certified, and the ability to work with public policy makers, other medical and health professionals, general public and community groups. Please submit resumes to: MOLOKAI GENERAL HOSPITAL,
P. O. Box 251, Kaunakakai, Molokai 96748, ATTN. Mr Stephen Petro, Chair, Executive Search Committee. Deadline for application: August 22, 1994.

Raytheon Services Nevada is seeking staff physicians to provide health care to 1,400 employees performing work in support of the world's only facility for the safe destruction of chemical warfare agents. This is a unique opportunity to join 35 health professionals on staff at the clinic providing Base Operations Service in support of the U.S. Department of Energy on Johnston Atoll, 750 miles southwest of Hawaii. The clinic, with a 6-bed inpatient capacity, features comprehensive diagnostic laboratory and emergency response. A full spectrum of services for non-occupational illnesses and occupational health surveillance programs is offered. Close interface with medical facilities in Honolulu, including oversight by Tripler Army Medical Center. Requires current U.S. medical license, with attainment of ACLS, ATLS and Medical Management of Chemical Casualties certifications prior to employment. We offer a competitive compensation and benefits package, including full housing and subsistence, paid professional membership and CME participation. Contract completion bonus paid each 6 months. A generous paid leave program is provided for this unaccompanied position. If you want a professional challenge that provides recreational activities, such as golf, sailing, SCUBA, tennis and more, call (808) 422-9241 for information and application, or forward *Curriculum Vitae* to: Nancy Vallely, Raytheon Services Nevada, P.O. Box 29939, Honolulu, HI 96820-2339. U.S. Citizenship required. EOE/AAE.

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Sports Medicine and Orthopedic Surgical Practice willing to share office space at Queen's POB-1 and Pali Momi POB location, complete staff, managerial system, radiology and physical therapy services available. Contact Diane Fong at 536-4992 M-W-F or at 487-7231 T & Th.

Office space available immediately in the Ala Moana Building. Prime location features 475 square feet (includes 3 treatment rooms) on the 10th floor, Waikiki view. Assume lease. Please contact 955-0589.

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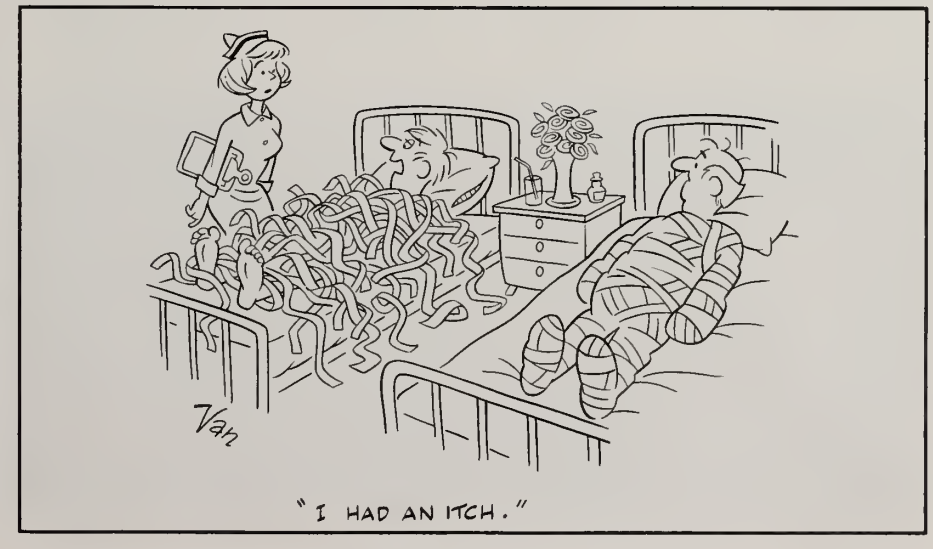
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News and Notes Henry Yokoyama MD

Life in These Parts

Trouble brewing in paradise.—Officials warn that heroin, once popular in the 60s and 70s, is making a comeback in Hawaii because prices have become comparable to other drugs. Derek Park, Habilitat director of induction and former drug abuser says, "Heroin is not to be taken lightly. Once you are addicted, you do anything to get it." His habit went from $50 a day to more than $500 a day in seven years, and when caught by police, he was charged with 15 armed robberies and faced a 20-year-to-life sentence before entering the drug rehab program at Habilitat.

Police Lt George Yamamoto of the Narcotics Division at the Airport substation provided the following information on drugs seized at Honolulu Airport:

	1992	1993
Heroin	265.2 gms	2,119.8 gms
Cocaine	21,492.1 gms	16,308.2 gms
Crystal meth	7,497.3 gms	5,091.9 gms
Marijuana	24,062.1 gms	29,085.5 gms

More problems in paradise.—Young Paik MD, director of the Hawaii Bone Donor Registry says, "It is important when the doctors diagnose leukemia that you look for a donor early. A lot of patients die because you find the donor too late. It takes time to find a donor." Although more than 120 bone marrow transplants have been done in Hawaii since 1979, there are about 60 people here now waiting for bone marrow transplants that could save their lives. Finding a match in Hawaii is a challenge because of the diversity and mixture of races even though there are 9,500 potential donors listed in our registry.

Fancy plates.—Have you seen recently? A stately maroon Cadillac with the license plate: IMMUNE; or a green foreign model racing happily on H-1 Koko Head bound with the plate: PAUWRK.

Hors de Combat

Fighting back.—Renowned reconstructive surgeon, Robert Flowers was petitioned by the State Regulatory Industries Complaints Office for disciplinary action on grounds that his treatment of three patients in 1990 fell below the standard of care. Bob filed a $20 million lawsuit in federal court against the state agency. Medical experts who reviewed the charts, including Judson McNamara, professor of surgery at John A. Burns School of Medicine came to Bob's defense.

Judson said in a sworn affidavit, "I couldn't believe any fair-minded person who has even the slightest bit of medical training could conclude the allegations were true and deserving of disciplinary action. These allegations are false and completely irresponsible. They are reckless." The lawsuit filed says, "The conduct of the office's attorneys and staff has been unprofessional, arrogant and frightening."

Physicians Speak Up

In a thoughtful "View Point" article in the *Honolulu Advertiser*, **Shay Bintliff**, clinical professor of surgery and pediatrics, proposes that the medical and professional organizations adopt the American College of Emergency Physicians resolution that "it disapproves of the use of any form of corporal punishment as the primary method of discipline of children because it glorifies and perpetuates violence."

Shay points out that to change a child's behavior, we should a) motivate the child to do something different from what impulse or inclination suggests; b) ensure that children understand what different and desirable behavior is, and that it is an option; and c) make sure that choosing to behave that way brings them some reward.

Corporal punishment on the other hand leaves the child hurt, angry and humiliated. This can lead to bullying siblings and other children in school, to antisocial behavior in adolescence and violence to spouse and children as adults.

Condensed Excerpts from *Stitches*, March 1994

In my third year of medical school, I was lucky enough to have a staff man with a sharp wit. One night when I was on call with him, we were awakened by an alarmed nurse. Half awake, we staggered to the nurses' station where the distraught nurse revealed the horrible news: "Doctor, his serum creatinine is very, very low. It's down to 10 mmol!"

Without batting an eye, the staff man quietly ordered, "Please cross and type two units of creatinine and infuse slowly over two hours." (George Prefiris, Ontario)

A distinguished neurosurgeon was renowned for prolonged, meticulous procedures often accompanied by good-natured derogratory remarks, eg, we all shared thick skulls, smaller than normal brains and were to blame for every spurter.

One Saturday afternoon after some six hours of routine drama, the surgeon said, "Jones, you sew up. I'm off to the circus." (As indeed he was, with his children) Jones, my resident of the hour, promptly asked, "Have they signed you up for the whole season, or just for the afternoon?"

The surgeon manfully replied, "Very good, very good, Jones—you just get on with the work." (A.G. MacIntyre, Alliston, Ontario)

Conference Notes

"Estrogen Replacement Therapy" VP Itimar Abrass, Professor of Medicine, U of Washington at Kuakini Medical Center on May 25, 1994.

"Estrogen was the second most-prescribed drug in 1993. Its use is dictated by selection bias (of patient and physician) and detection bias. Women on ERT do more exercise, are more cholesterol conscious and have more exams, viz rectal, Pap and mammogram. Epidemiologic studies show a 25% reduction in hip fractures, and 50% fewer Colle's and vertebral fractures. Randomized control trials have shown that ERT must be continued a life time and hip fracture benefits occur only after 7 or 8 years of ERT."

Estrogen in Cardiovascular Disease.—Estrogen decreases insulin resistance; raises HDL and triglycerides; lowers LDL. Progestin attenutates the HDL increase.

Estrogen in Atherogenesis.—Estrogen has direct vascular effects and alters thrombin mediators.

Estrogen in CHD.—Reduces risk by 35% to 45%; has secondary prevention effect.

Estrogen in Strokes.—Results are mixed; possibly a 5% risk reduction with estrogen alone; Swedish studies show a 40% reduction (with estrogen and progestin).

Other ERT Benefits.—Reduces menopausal symptoms (40% to 50% reduction in hot flushes); improves mind and mental functions.

ERT and Quality of Life:

a. 25 % reduction in hip fractures (ie, 3 hip fx per 100 women)

b. 35 % reduction in CHD

ERT Regimens

Standard ERT: Conjugated estrogens 0.625 daily; progesterone 10 mg first 10 days (5 mg likely protective); bleeding after day 15 requires evaluation.

Continuous ERT: Conjugated estrogens 0.625 with progesterone 2.5 or 5 mg daily. Irregular bleeding for 3 to 6 months (90% atrophic endometrium after 1 year of ERT).

Other Regimens: Provera 10 mg q 3 months (No data on endometrial Ca), estrogen patches, treat vaginal signs with estrogen cream.

Surveillance: Unopposed estrogen: Baseline and yearly endometrial biopsies. Estrogen/progestins: No baseline required. Annual mammogram.

Conclusion: Risk/benefit estimates favor ERT.

Miscellany

A tourist stopped at a topless bar in Nepal. While sipping his drink and looking around, he noticed that oddly enough the waitresses had no nipples. Curious, he finally asked one of the waitresses, "Miss, I am a stranger to these parts—I notice that you gals have no nipples." "Well, stranger, there are 500 of us. We were a persecuted religious group so we moved here

many years ago. We call ourselves, The Indianapolis 500." (As told by our favorite tennis pro, **Clay Benham**)

The small midwest town had no bank, so the country store receipts were kept under the counter and guarded by a parrot and a Doberman. A burglar broke in one night; as he made his way in the dark, the Doberman prodded his back gently to show his presence but made no aggressive move. The burglar recovered from his fright, then the parrot started to screech, "Stealing is a sin. Stealing is a sin." The burglar became annoyed and finally yelled, "You stupid bird! Can't you say something else?" The parrot was silent for a minute, then screeched, "Sic em!" (As told by humorist John Spangler, Straub OB man. Incidentally John tells us he started a Greek restaurant at Restaurant Row a couple of years ago and the most popular dish is called *Gyro.*)

Conference Notes

"Anticoagulation in the Elderly" by VP Itimar Abrass from U of Washington at Kam Auditorium at Queen's Medical Center on Friday, May 27, 1994.

"Over a million patients are treated annually with warfarin in the U.S. The studies are still controversial re the indications for long-term A.C. esp in the elderly..."

Measuring intensity of anticoagulation: INR = PTR ^{ISI} ISI values = 1.2 to 2.8 PTR is variable: If PTR = 1.5, INR may be as low as 1.6 (If ISI = 1.2) or INR may be as high as 3.1 (If ISI = 2.8).

"Atrial fribrillation occurs in 5% of patients over 60. The prevalence of AF increases with age, eg, 15% at age 75. The CVA risk from AF is 5% a year and rises with age...AF occurs in 60% of CAD patients; in 50% to 60% of hypertensive patients; and 20% to 30% in RHD patients."

• Risks and benefits of AC: Fewer CVAs vs bleeding complications.

• Conventional wisdom is that risks from Coumadin rise with advancing age.

Studies on anticoagulation in non-valvular atrial fibrillation (All had to be terminated because of the high risk).

Study	Duration
AFASAK*	15 mos
SPAF	14 mos
BAATAF	27 mos
CAFA	15 mos
VA	22 mos

• In the AFASAK study, the CVA rate dropped from 4.6 to 1.9.

"Baseline CVA rate in atrial fibrillation is 4.1% per year. With anticoagulation, the average decrease is 3 events per 100 patient years...75% of strokes occur with inadequate or no anticoagulation. The decrease in CVA mortality was from 6% to 2.2%...In the VA study, the decrease in mortality was from 5% (placebo) to 3.3%. There were no benefits from ASA in the AFASAK and BAATAF studies; only a slight benefit in the SPAF study."

Risks of anticoagulation: Slight increase in minor bleeds; no difference in major (GI or intracranial) and fatal bleeds.

Sensitivity of warfarin increases with age and leads to higher levels of AC.

Anticoagulation in elderly—Five independent risk factors:

1. Hx of CVA.
2. Hx of GI bleed.
3. Age over 65.
4. Comorbid diseases.
5. Atrial fibrillation.

Risk factors for complications of chronic anticoagulation—Four independent risk factors:

1. PTR greater than 2.0.
2. High PTR variability.
3. Recent initiation of AC (first 3 months).
4. Three or more comorbid conditions (excluding age, Hx of CVA, Hx of HTN, PVD and AFIB).

Average bleeding rates:

Total bleeds	5.7%
Major bleeds	1.7%
Fatal bleeds	0.8%

Summary re bleeding risks:

1. When initiating therapy.
2. Intensity of therapy.
3. Patient characteristics:
 a. bleeding history
 b. age
 c. cerebrovascular condition
 d. comorbid conditions

Comparison ASA vs Warfarin—SPAT II Study results.

Patients under age 75:

ASA 1.9 vs Warfarin 1.2 (Ischemic strokes)

ASA 0.2 vs Warfarin 0.5 (Intracranial bleeds)

Patients over age 75:

ASA 4.8 vs Warfarin 3.6 (Ischemic strokes)

ASA 0.8 vs Warfarin 1.5 (Intracranial bleeds)

Recommendation: Potential benefits of anticoagulation in atrial fibrillation outweighs the potential risk.

From the Desk of Judge Patrick Yim

Stress Diet

Breakfast:

• 1/2 grapefruit
• 1 slice whole wheat toast
• 8 oz skim milk

Lunch:

• 4 oz lean broiled chicken breast
• 1 cup steamed zucchini
• 1 Oreo® cookie
• Herb tea

Mid-afternoon snack:

• Rest of the package of Oreos®
• 1 quart Rocky Road ice cream
• 1 jar hot fudge

Dinner:

• 2 loaves garlic bread
• Large pepperoni and mushroom pizza
• Large pitcher of beer
• 3 Milky Way® candy bars
• Entire frozen cheesecake eaten directly from freezer

Diet tips

1. If no one sees you eat it, it has no calories.
2. If you drink a diet soda and eat a candy bar, they will cancel each other out.
3. When eating with someone else, calories don't count if you both eat the same amount.
4. Food used for medicinal purposes never counts, such as: Hot chocolate, brandy, toast and Sara Lee™ cheesecake.
5. If you fatten up everyone else around you, you will look thinner.
6. Movie-related foods don't count because they are simply part of the entire entertainment experience and not a part of one's personal fuel, such as Milk Duds®, popcorn with butter, Junior Mints® and red licorice.
7. Cookie pieces contain no calories. The process of breakage causes calorie leakage.

Reflections

(Courtesy of E. Claiborne Robins Jr et al *Robins Reader*)

What is Good?...Whatever increases the dignity, self respect and well-being of the individual is good—anything that decreases it is bad.

Whatever exalts human personality is good—anything that degrades it is bad.

❧ Mark Twain once said that truth is such a precious commodity that it ought to be used sparingly.

❧ Character is how you behave when no one is looking — Anonymous



The Weathervane Russell T. Stodd MD

You cannot guard against the arbitrary.
The question of who should be permitted to market contact lenses is being contested in the state of Florida. The state attorney general has brought suit against Johnson and Johnson, Bausch and Lomb, American Optometric Association, Contact Lens and Anterior Segment Society and nine optometrists. The AG alleges that a conspiracy exists to limit the marketing of disposable contact lenses, and that "Floridians are paying more for contact lenses than they would have under a true free market." The defendants vehemently deny the charges and state that the products are sold only through specialists to promote optimum vision health. "We don't believe it's appropriate to sell to nonprofessional dispensers." Apparently the AG doesn't recognize the inherent risk involved in applying a device directly on the cornea.

Democracy is an abuse of statistics.
For more than two years the Congressional Office of Technology Assessment (OTA) has been studying the cost of defensive medicine, and has now released an 89-page draft of its findings. The report claims that liability fears are only a minor part of doctors' decisions on how to test and treat their patients. Aside from certain emergency room x-rays and decisions to perform some C-sections, the OTA claims that less than 8% of all physician-ordered diagnostic tests are performed primarily because of fears about lawsuits. Plaintiffs' attorneys and some consumer groups are ecstatic—"It sounds like I wrote it," said one lobbyist. However, the OTA report failed to put a dollar value on the costs of defensive medicine, stating, "It is virtually impossible" to do so. The report claims that physicians may not be responding truthfully when asked about their clinical decisions. So, it appears we have another useless study that will serve no purpose except to help those who are determined to obstruct any reform of malpractice laws.

If all economists were laid end to end, they would not reach a conclusion.
In FY (fiscal year) 93, the budget for the Medicaid fraud unit was $48 million, according to HCFA. The unit received about 100,000 fraud and abuse complaints during the year, but only 2,000 required investigation. Of these, 600 cases were ultimately referred to the IG's office, and 115 were prosecuted. Therefore, $48 million was expected to pursue 115 cases, or $417,391 per case! The budget for the fraud unit was increased to $69 million for 1994, and $76 million has been requested for 1995. Is this what President Clinton meant by reinventing (or reinvesting?) government?

Nothing is as temporary as that which is called permanent.
If Congress relies on the automatic Medicare update formula written in the law, surgeons could see a major increase of 12.6% for 1995. These figures are HCFA's calculations based on the decline in the number of surgical procedures. How big the 1995 update actually turns out; relates to how close Part B spending comes in under the Medicare volume performance standard-based fee increase. However, past HCFA behavior indicates that one should not wait breathlessly. Even legislative promises are subject to bureaucratic whimsy.

The world belongs to the enthusiast who keeps cool.
Perhaps they are seeking a new career, or perhaps many physicians are fed up with the actions of Congress and local governments. But, for whatever reason, MDs are running for office in record numbers. At least 37 doctors have entered their names in races for Congressional office. Here in Hawaii, one-time Maui GP and erstwhile director of the DOH, Jack Lewin, wants to be governor. Also Duke Bainum MD will run again. Sadly, the effect of these people on Congressional legislation will come a little bit late. From current action, it appears some health system reform bill will come out of Congress before the current crop of candidates can make significant impact.

The right man at the the right time.
In a most dramatic and significant manner, the American Medical Association House of Delegates on June 12, 1994, elected Lonnie Bristow MD to serve as AMA president in 1995. The AMA House of Delegates, by any standard, is the primary and principal, grass roots, democratic organization in the body of American medicine. The election of this gifted black American physician, dedicated to preserving the quality, freedom, and integrity of our profession, should make every physician proud of the AMA. The election of Dr Bristow clearly displays that the AMA leaders are not a group of aging, smug, self-serving autocrats dedicated to status quo. The American Medical Association leadership in this decade has risen to the top in displaying protection for our patients, wisdom in our political agenda, courage in working for intelligent change, and willingness to respond to challenges. Moreover, the NBC/*Washington Post* poll reported that more Americans have confidence in the AMA's ideas than anyone else's. More than hospitals, big business, organized labor, even more than the President, who came in second. If you are not a member today, you should be, if for no other reason than that the AMA will have a powerful voice in shaping your professional future.

Perhaps in time the so-called dark ages will include our own.
It's just one thing after another for Dr Jack Kevorkian. He allowed the *Second City* comedy troupe to use his name, calling its act "Kevorkian Unplugged." Now he has filed a suit claiming they violated the agreement by refusing to let him watch the show for free, and because they use his name to promote alcohol. After all, alcohol can kill a person.

Addenda
▲ On the O.J. Simpson happening—once the media touches a story, the facts are lost forever.
▲ Democracy gives every man the right to be his own oppressor.
▲ Fat expands to fill any apparel worn.
▲ Nothing can stand against the assault of laughter.

Aloha and keep the faith.
rts
■

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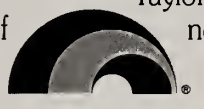
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Editorial Norman Goldstein MD

This issue of the *Journal* is dedicated to women's health. Some of the papers will be presented at our HMA meeting to be held October 7 to 9, 1994 on the Big Island.

Our guest editor for this special issue, rheumatologist Maria Theresa Danao MD has done a superb job in getting the manuscripts and synopses from local and Mainland speakers — in record time! Mahalo, Theresa.

In addition to serving on our editorial board, Theresa serves on the Honolulu County Committee on the Status of Women, the Advisory Board of the Hawaii Lupus Foundation, President of the Filipino Association of University Women, and President -elect of the Philippine Medical Association of Hawaii.

The scientific meeting to be held at the Ritz-Carlton Maunalani Hotel on the island of Hawaii is a *must for all physicians*. The subjects to be covered at our 138th Annual Meeting include: Domestic violence, stroke in women, cardiovascular disease in women, breast reduction surgical options, new contraception options, and hormone replacement therapy.

With the life expectancy of women now at 81 years, and 42 million women over the age of 50 living in the United States— and that number is expected to double in the next 12 years!— *you* must not miss this annual meeting. Call the Hawaii Medical Association office (536-7702) for reservations today.

Norman Goldstein MD, Editor

The Editor's Coffee Cup

The following definition is written on Editor Norman Goldstein's coffee cup: **doc•tor** / 'dak-ter / n: a person who has devoted a long part of his life...to making yours even longer.

Historical Notes

John A. Breinich
Hawaii Medical Library

At the Annual Meeting of the Hawaii Territorial Medical Society of 1906, there is an interesting report of a visit by Dr A.W. Morton of San Francisco who gave a surgical clinic at the Queen's Hospital.

"The feature of the clinic was the brilliant demonstration of spinal cocanization as perfected by Dr Morton. The technique is as follows: The patient is placed in a sitting position and bent forward, thus widening the space between the laminae of the vertebrae. An imaginary line from the highest part of one crest of the ilium to the other crosses the median line about 1 to 2 inches above the proper site. The apparatus used by Dr Morton consists of a glass Luer syringe and a needle with a long slope to the point, which tends to wound the spinal meninges less than a short slope. The material used for injection is Tropococain, sterilized in small, sealed bottles, one grain each. The syringe and needle having been boiled, the powdered cocain is placed in the barrel and the needle is then inserted into the subarachnoid space at the site selected. The proper situation for the end of the needle is demonstrated, for on withdrawing the piston, the cerebrospinal fluid is drawn into the barrel. This fluid dissolves the cocain in a few seconds and the fluid, now a cocain solution, is injected slowly into the subarachnoid space.

The first case operated on was one of double inguinal hernia. The patient having been injected as above described, the operation was performed according to the Fergusson-Andrews Method. The patient during the operation apparently experienced no pain whatever. He laughed, talked, moved his limbs, coughed when called upon and swallowed some water.

Dr Morton kept up a continuous jollying of the patient—a system of mild hypnotism or suggestion as it were, which evidently did much to remove nervousness and apprehension



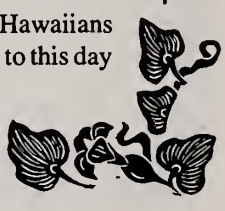
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Hina—The Goddess of Food Plants

Another form of Hina was that of goddess of food plants. This Hina was called *Hina puku'i* or Hina-gathering food. Sometimes this Hina was also called *Hina-hele*.

Hina puku'i had a special calabash in which she kept food and food plants. She was lured away from her home by a chief and in the process spilled the contents of her calabash. These contents flew up to the heavens and became the moon and the stars.

It is no coincidence that Hina of the food plants should also be associated with the moon and stars. Hawaiians of old adhered to a strict lunar planting calendar for all their farming and fishing. There are taro farmers to this day who will plant only at night and then give the new plants a particular tilt referred to a *Hina*.



from the patient's mind.

Special points brought out in Dr Morton's remarks were the importance of not tying sutures so tightly as to cause tissue necrosis and the necessity of wearing rubber gloves in order to do clean operative work. The gloves could be boiled but the hands not. It is impossible to sterilize the hands and the great majority of suppurations in clean cases were not the fault of the nurses or the sutures but of the operator's dirty fingers."

Medical School Hotline

J. David Curb MD, MPH, Helen Petrovitch MD, Beatriz Rodriquez MD, PhD, and Kamal Masaki MD
John A. Burns School of Medicine
Department of Medicine,
Division of Geriatric Medicine
University of Hawaii

Women's Health in Hawaii

Over the past decades, medical research in many areas often excluded women. Knowledge generated by studies conducted in men generally has been extrapolated to women. In some instances this has led to biased standards of care and has prevented the consideration of some important aspects of disease in women.[1] Recently, Congress has proposed that women and minority groups should be included in all federally funded clinical research.[2] The Food and Drug Administration also is recommending that studies on new drugs should include women.[3]

Women are biologically advantaged with respect to mortality and live longer than men. However, this advantage has been declining steadily during the past decade.[4] Despite this advantage of lower mortality, women have greater morbidity and are affected by more chronic illness than men.[1,4] They live an average of 7 years longer than men, but the quality of those additional years often is limited by illness, including breast, lung, and colon cancers; heart disease and stroke; osteoporosis; Alzheimer's disease and depression. These diseases are frequent in the last third of women's lives, but they are not inevitable consequences of aging. These afflictions often are preventable and treatable. In recent years, the increased awareness of the medical problems that affect women has led to a major commitment to research on women's health and illness.[1]

The National Institutes of Health have instituted a major clinical trial and an observational study that will address the impact of hormone replacement therapy, a low fat/high fiber diet, and calcium/Vitamin D supplementation on the overall health of women. Each intervention in this trial is hypothesized to have an impact on multiple study endpoints. Hormone replacement therapy is expected to benefit coronary heart disease and fractures; low fat/high fiber diet is expected to benefit colorectal and breast cancer, as well as coronary heart disease; calcium/Vitamin D supplementation is expected to benefit fractures and colorectal cancers.

The University of Hawaii, under the leadership of investigators in the John A. Burns School of Medicine, submitted a proposal to be among the 45 centers of this important study of more than 200,000 women nationwide. This University proposal represents a multi-institutional, multi-disciplinary collaborative effort involving many schools and departments at the University of Hawaii, as well as other medical institutions in Hawaii. Close collaborative relationships with the Straub Clinic and Hospital, the Kaiser Foundation Hospital, Kapiolani Medical Center for Women and Children, Wahiawa General Hospital, Kuakini Medical Center, Queen Emma Clinic at Queen's Medical Center and the Pacific Health Research Institute, as well as the University of Hawaii Schools of Nursing and Public Health, the Cancer Research Center of Hawaii, Department of Human Nutrition and the John A. Burns School of Medicine have been established. Within the latter institution, the Departments of Medicine, Family Practice, Obstetrics and Gynecology, and the Division of Geriatric Medicine will collaborate.

Should the Hawaii Clinical Center be funded, the Hawaii investigators will recruit 1,400 women for the clinical trial, and 2,220 women for the observational trial during the 3-year recruitment period. These women will be followed for an average of 10 years. A clinical center located in Hawaii would benefit all women in the state by raising their level of awareness about various health issues and providing many women the opportunity to participate in the study. This important study of women's health is long overdue.

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Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Drug Utilization Evaluation: A Unique Method

Drug utilization evaluation (DUE) is a process of internal review utilized in health care facilities to assess patterns of use, safety, cost-effectiveness, and efficacy of prescribed medications. This process is mandated by and monitored by JCAHO in accredited facilities.

DUE traditionally has been performed by retrospective chart review. Clinical indicators were developed and screeners applied these indicators to charts identified through the pharmacy records of prescriptions. This process has required input from both the pharmacist and the physician to accurately interpret the clinical records and analyze the results of reviews. Reviews

depend upon the availability of patient charts and auditors to collect data. Manually collected data, unavailability of charts, lack of ability to retrospectively evaluate all prescriptions and staffing limitations may contribute to inefficient DUE activities.

A pilot project at Tripler Army Medical Center seeks to develop an efficient, concurrent, effective, accurate alternative to traditional DUE methods. This is accomplished through the centralized pharmacy, to which all inpatient prescriptions are entered on a computerized system. Providers are prompted, on line, to respond to 5 simple questions regarding their use of ampicillin-sulbactam at the time of initial prescription. The program does not require participation in order for the prescription to be filled. After entering responses to the queries, a brief educational message is provided to enlighten the provider to the reason a particular question was asked. Provider responses are printed to a pharmacy location. Data analysis by a pharmacist and review by a physician complete the process. The DUE function has thus been expanded to provide concurrent data retrieval, give immediate prescriber feedback, and simultaneously to be more efficient.

A sample interaction follows:

Dear Dr X, You have written a prescription for Mrs Y. Please answer the following question for a DUE review:

• Was the dose of ampicillin-sulbactam adjusted for renal function?

• Answer provided by physician.

• The following dosing adjustments are suggested:

Creatinine Clearance	Dose Interval
>30 cc/min	6 to 8 hours
15 to 29 cc/min	12 hours
5 to 14 cc/min	24 hours

This pilot project met great acceptance by physicians, and the initial response rate was greater than 90%. We will expand the program to provide analysis of cost savings, changes in prescribing habits, and clinical outcomes in future reviews.

Our initial experience has led us to plan all future DUE data collection exercises via this novel medium.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

HMA Council Highlights

The HMA Council meeting on July 8, 1994 was called to order at 5:35 pm by Dr Fred Holschuh. Members present were: Drs A. Don, president, J. Spangler, C. Lehman, J. Chang, C. Kam, R. Stodd, L. Howard, E. Bade, B. Shitamoto, T. Smith, D. Canete, H.K.W. Chinn, P. Chinn, W. Dang Jr, P. Hellreich, R. Hollison, S. Hundahl, R. Kimura, K. Thorburn, J. Betwee, H. Percy, P. Kim, C. Kadooka, A. Bairos, W. Dang, J. Kim, J. McDonnell, S. Wallach, medical student Anna Matteo, Alliance representative Mrs Lillian Nishi. Guests present were: John Lewin MD, Ms Sahi Takeda, Nancy Kuntz MD, Ms Charlene Young and Peter Sybinsky PhD of the Dept of Health. Staff members present were: J. Won, N. Jones, J. Asato, L. Tong, P. Kawamoto, J. Estioko, A. Rogness, recording secretary.

Dr Don reported that he had just come from an HMSA meeting and Mr David Abernethy, staff director of the House Ways and Means Committee, who spoke of an upcoming bill that incorporates the Patient Protection Act and also mentions using Medicare as the provider, setting up a Medicare C program. Medicare C would replace Medicaid and there would be flexibility in the program. Reimbursement was not discussed.

The HMA Alliance accepted the AMA-Education and Research Foundation's highest honor during the AMA Alliance meeting in Chicago in June. The Alliance was recognized for the greatest percentage increase in AMA-ERF contributions and for the greatest per capita AMA-ERF contributions.

Dr Lewin thanked HMA for its support while he was director of health. He introduced the new State Director of Health, Dr Peter Sybinsky, and Ms Sashi Takeda, Chief of School Health Services, Nancy Kuntz MD, Chief of Family Health Services, and Ms Charlene Young, Deputy Director. HMA wished Dr Lewin well in his campaign for governor and gave him a round of applause.

Actions

1. Council approved a seminar sponsored by Abbott Laboratories on "Managing Health Care Reform" in September pending negotiations with Abbott on the site of the program and cost of meals. The Executive Committee will proceed with the arrangements for the program pending negotiations.

2. (a) Council gave its approval to the President to appoint a committee of 3 people to work with the HMA Alliance to prepare necessary materials for the AMA House of Delegates meeting in December; eg, (list of events that AMA physicians and families might be interested in attending). Drs Jeanette Chang, Calvin Kam and Stephen Wallach volunteered to be on the committee. (b) Council also approved a three-member committee to work with the Alliance to sell HMA shirts at the AMA Meeting, pending permission by the AMA.

3. Council agreed that the HMA legal counsel verbally bring to the attention of the Board of Medical Examiners that since S.B. 1249 Nurse Prescriptive Authority contravenes the Pharmacy Act, it is not legal. Under the circumstances, the HMA cannot assist the BME in the formulary and the BME may want to consider its position in the process.

4. Council approved two letters drafted by the Tobacco Task Force to be signed by Dr Don. The first letter was to Governor Waihee thanking him for vetoing SB 256, relating to smoking; the second letter was to Mr E. Philip Lyon of Kamehameha Center Company congratulating him for a smoke-free shopping center with the exception of Kenny's Burger House and Kenny's Coffee House & Restaurant.

5. Council approved that the IPA Steering Committee establish its program and raise money by subscription or loan, etc, and report back to Council. It was also approved that the HMA meet the cost containment crisis in the state by following what Arizona and Idaho are doing and push the Medisaver concept.

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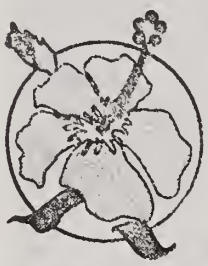
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This concept is to be introduced at the legislature next year and will be patterned after the Arizona and Idaho bills.

6. Council asked HMA's legal counsel to determine whether HMA, as a non-profit organization, can make a political endorsement without giving funds to the campaign and without threatening its tax status.

Component Society Reports

Honolulu.—President Leonard Howard reminded Council of the HCMS Summer Fun Program to be held on August 10 at the Waikiki Aquarium. He also reminded physicians to submit their resolutions for the HMA annual meeting. There will be an HCMS meeting prior to the caucus to discuss resolutions.

Hawaii.—Dr Ernest Bade reported there was a county society meeting on June 16, and there will be an educational weekend seminar the end of August at Waikoloa.

Maui.—Dr Barry Shitamoto reported that Maui County had a meeting in June on Alzheimer's disease. Dr Shitamoto is trying to get the Medical Examiners and the Chief of Police to speak at the next meeting.

West Hawaii.—Dr Theresa Smith reported that the last West Hawaii meeting was on Health QUEST and the next meeting will be on physician profiles.

For Information

AMA Delegates Report.—Drs Stodd and Kam reported that the AMA House of Delegates met in Chicago the second week in June. Dr Robert McAfee was installed as president and Dr Lonnie Bristow aspresident-elect. Dr Bristow will be an excellent spokesman for the AMA over the next three years. Topics discussed were employer mandate insurance, health savings accounts, defining primary care, physician work force, violence in America and child abuse, Patient Protection Act, drug testing of physicians, managed care, retention of medical records and the future role of county societies. The AMA is financially sound and dues will not be raised in 1995.

Health Quest Advisory Committee.—Drs Don and Holshuh have been appointed by the Governor to serve on the committee.

New grant award.—This is a continuation grant of Dr Calvin Sia's Medical Home Project. The goal is to assure that patients in economically depressed areas get the necessary educational, social and medical services. This project started July 1 and has been approved for 4 years.

HMA President's Message

Andrew Don MD

Serving as President of Hawaii Medical Association for the past year has been busy, tough and a very gratifying experience, and I thank the membership for providing me this opportunity. These are extraordinary times for medicine and require extraordinary efforts from HMA. The call for health care reform is raising many issues for physicians including their ethical responsibilities to patients.

Many physicians are questioning whether the Hippocratic Oath, which has guided the practice of medicine for more than 2,000 years, can prevail. The Oath states "Whatsoever house I enter there I go for the benefit of the sick according to the best of my ability and judgment." Will this most basic belief be altered by cost constraints? The reforms have caused differences between primary care physicians and specialists as they look at the new practice patterns forced on them by reforms. While government and insurance are driving forces seeking health delivery reforms, physicians are best able to preserve quality of care, practice disagreements, and medical ethics.

Physicians must be in the forefront to preserve excellence in health care. From the AMA meetings I have attended, I am pleased to see the AMA is striving to do just that. In March 1994, during a legislative session in Washington with all state medical societies and specialty societies, the AMA led us in our plea for Physician's Voice, Patient's Choice, and Universal Coverage as goals we want Congress to support. At the AMA annual meeting, there was unanimous support for the Patient Protection Act that protects patient's choices, requires certification of managed care plans, provides point of service and choice of health plans. These proposals have gained strong support from Congress.

Beginning this year, HMA began publishing the *Hawaii Medical Journal* in house. This decision appears to be financially sound, as well as rewarding. The *Journal* continues to be listed in the *Index Medicus* and there is an increasing number of sponsors of the *Journal*. Congratulations to Dr Myron Shirasu, the commissioner for internal affairs, and Dr Norman Goldstein, the *Journal* editor, and as always, the dedicated and capable staff in HMA communications department for putting the *Journal* together.

The 1994 Legislature presented many interesting challenges: Public safety issues, health system reform, and other health care providers seeking to expand their scope of practice. The passage of the smoking bill, firearms legislation, some tort reforms, and the establishment of an HIV Advisory Committee are pluses for medicine. However, the passage of the Advanced Practice Nurse Prescription Authority at the last minute of the session raised concerns that will need to be addressed in the coming year.

The State's Health QUEST programlm has been another concern. With little input from physicians, we were able to convince the administration to postpone the QUEST startup date and to institute a QUEST Advisory Committee. It should be noted that the Legislature has limited Health QUEST to its present activity and requires a complete report prior to the 1995 session. Any plans for extending the program also require legislative approval.

As health reform of the delivery systems continue and priority is directed toward large managed care plans for cost control in a market-driven environment, practice physicians are losing influence and control of health care. Physicians individually cannot compete in this environment. A steering committee has been appointed to look at the possibility of an independent practice association or IPA to preserve physicians' autonomy, control and decision making. The committee will seek to ensure the freedom of choice for patients and provide cost-effective, quality health care as determined by physicians. The concept of such a network is still being explored.

Mahalo to the HMA staff, officers, commissioners, committee and Council members who serve unselfishly to further the goals of HMA.

HMA Alliance

Susan L. Foo, President

September is back-to-school month, and it's time to focus on our most valuable asset—our children. In support of the AMA Alliance campaign against domestic violence, drug abuse, preventing child abuse and neglect, and assisting in nurturing family values, author Bobbie Sandoz has been at the forefront. She writes:

The Critical Need for Positive Parenting

We've all been struck by the recent rise in bold crimes against people, including our children. Even worse, many of these crimes are committed by the children themselves. What's gone wrong? How have we created such an unhappy harvest in an unsettled world?

It's simple, what we focus on is what we get! Scientists have conducted innumerable studies to prove this law of physics. Anytime we send positive energies out into the world, we get positive results in return. That's why plants talked and sung to bloom more abundantly than those which have been ignored. It's the reason experimental rabbits who were kissed and held were the only ones on a fatty diet to maintain low cholesterol levels. And, it's why loved children thrive and grow, whereas neglected ones often perish emotionally as well as physically.

The same is true when we focus on the negative. Whenever we fill our homes and minds with negative ideas and aggressive

images, we become more comfortable with unfriendly impulses. Likewise, when we indulge in angry feelings and aggressive actions, rather than discharge these negative energies, they grow bigger within us.

We must understand that we can no longer complain about the bad news of the day. It's our job to realize that we are the newsmakers and begin the process of changing the kind of news we're creating. The way to do that is to become an army of good news, one by one, moment by moment, day by day. A good place to begin is in our living room with our children, practicing our focus on positive thoughts, feelings and actions. In this way, we begin the process of filling our homes with harmonious feelings and peaceful children to contribute to a better world.

• Embrace your child and put him or her, as well as the disruptions and errors he brings to your day, on the agenda. As you learn to keep your heart open to embracing your child no matter what's going on, you develop the ability to maintain your loving feelings for him or her under all conditions—or unconditionally.

• When you learn not or abandon loving feelings for your child, no matter what he or she is doing, you're able to remain in your heart, even during those times when he or she's immature, disruptive, or in error and needs teaching. Your ability to remain loving in the face of your child's disruptions and errors greatly enhances the clarity of your lessons.

• If you're committed to focusing positively on your parenting during those times when your child must be taught from his or her mistakes how to live life more harmoniously, you'll take the time to teach him or her life's important lessons without disappointment, resistance, anger or resentment.

• By remembering to remain loving while teaching your child the many lessons that will grow out of his or her daily disruptions and errors, you're able to effectively teach him how to behave under all kinds of circumstances.

• In giving the gift of remaining a loving, trusted guide willing to teach your child the daily lessons of life, you not only keep your own heart filled with love under all kinds of circumstances, but teach your child the lessons that make him or her a confident, caring, cooperative person for the world.

• Whenever your heart and home are filled with the clarity and harmony that go with this positive approach to parenting, healing energies emanate from your household and its members outward to contribute immediately to a better world.

Bobbie Sandoz MSW is author of Parachutes for Parents, Learning to Parent from the Wisdom of Love, and contributes to The Honolulu Advertiser "Relationships" column. Her book is available in bookstores locally and nationally and by calling (800) or (808) 526-1478.

He Says/She Says: Women Not Well Prepared Financially

Paul R. Pignone
Certified Financial Planner

The cold hard facts: Women are not well prepared financially, particularly for retirement. On average, women earn 25% to 30% less than men,[1] often working part time or taking time out from full-time careers to raise children. These factors minimize pension, Social Security and health-insurance benefits. Many divorced women, facing the financial burden of raising children without marketable job experience, quickly fall into poverty. Some divorced women unwittingly give up the right to receive their former husband's pension benefits after his death. Despite the fact that women generally outlive men by 5 years or more,[2] most women have not saved enough to live comfortably during retirement, and many depend solely on Social Security. One survey found that women save only half as much as men, start saving later than men, and noted that 70% of the nation's poor are women.[3]

It is estimated that 80% to 90% of women will have to be solely responsible for their own finances at some point in their lives,[4] yet women often are not involved in major investment and financial decisions of the household, and are not as confident as men about financial matters. Favoring more conservative investments, women are not as well diversified[1] which can hamper long-term investment growth that is so necessary for a comfortable retirement. Women also pay significantly more than men for goods with negotiable prices. The American Bar Association studied car dealerships in 1990 and discovered that women were charged an average of 40% more than men.[1]

Today's women need to learn not only about investments and retirement planning, but money management, insurance, taxes, and estate planning. They need to participate in their family financial decisions, including taxes and investments. Paying bills and balancing the checkbook are not enough. Too often a woman suddenly widowed has no idea what investments her husband made or what to do with the investments when she locates them. Widows are particularly vulnerable to investment scams or inappropriate investment choices.

Women should open their own individual retirement account or participate in a retirement plan at work rather than depend solely on a husband to provide for retirement. In addition, women should establish credit accounts in their own name to create a credit history. It will be needed when widowed or divorced.

Women make up 51% of the U.S. population and earned more than $931 billion in 1990 alone, nearly 36% of the national income.[5] Women today are realizing the benefits of sound financial planning. Many have taken steps to become better educated in financial management principles. Attending seminars, enrolling in non-credit university classes, and seeking the assistance of qualified, competent professionals are steps that will reverse past trends.

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Editor's Note: Paul Pignone is a Certified Financial Planner, a director of the Hawaii Estate Planning Council, President of Honolulu Financial Advisors, Inc. and the Chairman of the Board of the Hawaii Institute of Certified Financial Planners. Mr. Pignone can be heard on KGU radio on Saturday mornings on "The Financial and Legal Clinic."

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Domestic Violence—A Medical Perspective

Julie Owens, Executive Director
HOPE Domestic Violence Consultants, Kailua, Hawaii

One of the patients awaiting treatment is a well-dressed middle-aged woman with back injuries from a fall down the stairs. Another is a university student waiting for x-rays of a spiral wrist fracture she suffered while playing volleyball. Many others, of all ages and ethnic backgrounds, are seeking treatment for problems as varied as acute anxiety, depression, attempted suicide, severe headaches, eating and sleeping disorders, pregnancy complications, chronic pain, or substance abuse. What do all of these women have in common? They are all victims of battering who are seeking medical treatment for abuse-related problems.

In a society that is still waking up to the reality that domestic violence is a serious crime, and not a private, family matter, another important facet of this age-old problem has recently begun to surface. New research is making it increasingly evident that we must acknowledge and address domestic violence in America as a major health care concern.

According to the U.S. Surgeon General, battering is the single most common cause of injury to women, resulting in more injuries than all auto accidents, rapes, and muggings combined. Domestic violence is such a common health problem that it is responsible for annual medical expenses totaling $3 to $5 billion, and businesses forfeit at least another $100 billion each year in sick leave, lost wages, absenteeism, and nonproductivity. Despite the huge number of victims, however, the U.S. Surgeon General estimates that only 5% of all battered women who seek medical care are identified as domestic violence victims.

An astonishing study recently released by the American Medical Association Council on Scientific Affairs reveals that approximately 22% to 35% of all women patients in emergency rooms are there for treatment of on-going abuse—either injuries or related symptoms. For the many women who require emergency surgical services each day, a full 50% have injuries caused by battering.

These new figures have prompted many concerned health care professionals to begin carefully reexamining the charts of all female patients with histories of repeated injuries and to also start routinely questioning every female patient about possible abuse.

Perhaps an even more shocking finding in the same report is the astounding conclusion that 37% of all obstetric patients—across class, racial, and educational lines—are physically battered while pregnant. Pregnancy has been identified as a particularly high risk time for abused women who often suffer attacks purposely directed at the abdomen, and who suffer miscarriages at 3 to 5 times the rate of non-battered women. Assaults during pregnancy can cause severe trauma to the fetus as well as to the mother, and frequently result in low birth weight, pre-term labor, or birth defects. According to the March of Dimes, more birth defects are caused by battering during pregnancy than by the combination of all diseases and illnesses for which pregnant women are immunized.

In addition to causing serious physical trauma, domestic violence has proven to be one of the most significant contributors to a wide variety of other physical and mental problems for women. Despite the fact that it is often the hidden root cause of a woman's deteriorating health, it is rarely identified and treated as a source of illness.

Abuse typically follows a pattern and becomes more frequent and more severe as time passes; therefore, a battered woman's health may reflect corresponding stages of increasing medical complexity. This progressive nature of violence commonly leads to a victim's utilization of various medical and social services. If a health care provider is trained to recognize this continuum of symptoms, an opportunity to give support and appropriate referrals is provided.

Medical problems resulting from abuse usually begin subtly as a victim is subjected to escalating emotional, psychological, or physical abuse. Routinely harassed, humiliated, and forced to walk on eggshells, a victim may become overwhelmed by extreme tension. The constant stress she experiences can lead to any number of illnesses.

Research has revealed many of the physical symptoms that can evolve for women who live with abuse. Among those that occur commonly are chronic headaches, fatigue, insomnia, gastrointestinal disorders, depression, anxiety, chronic pain, eating disorders, muscle aches, pregnancy problems, hypertension, vague complaints, and even arthritis and heart disease.

When symptoms such as these begin to affect a woman's health significantly, she is likely to seek medical treatment. Making a concrete diagnosis often is a difficult task for practitioners, since abuse and fear of reprisal may prevent a patient from openly revealing the abuse. Studies indicate, however, that when questioned with empathy and in private, most battered women are actually relieved and will respond honestly to questions.

Unfortunately, research has revealed that the most common medical response to abused women is to prescribe either tranquilizers, hypnotics, or pain medications. Because of the medical community's lack of information about domestic violence, an estimated 1 in 4 battered women leaves the health care setting with the diagnosis "hysterical," "neurotic," "hypochondriac," or "a well-known patient with multiple vague complaints." Patients labeled in this manner are typically referred to mental health professionals and not to the much-needed domestic violence services. As a result, victims may believe they are *sick* or *crazy*, something they have probably heard often from their abusive partner. More frustrated and confused than ever, the majority of these victims return home where the danger to them continues to escalate.

For many battered women, a stress-induced physical illness will lead to increased social isolation. As their health suffers from the negative effects of abuse, they may be less able to fulfill outside obligations or commitments. They may be forced to stop going to work, school, or church, and may have to reduce the time spent with supportive family or friends. While confined to home with health problems, they are more accessible to their partner's violence, and therefore are likely to become even more severely abused. In many cases, as a victim's confusion and frustration increases, her health continues in a downward spiral into substantial psychosocial problems.

Drug or alcohol abuse, severe depression, and suicide attempts are among the very serious conditions for which a battered woman may ultimately find herself being treated These common responses to ongoing abuse are unfortunately often misinterpreted as the cause of the abuse. To the contrary, such outward manifestations often indicate a victim's desperate desire to escape the hostage-like situation established by her partner's power and control tactics. Other emotional symptoms that may follow constant abuse include emotional shock, denial, withdrawal, confusion, psychological numbing, or PTSD (Post Traumatic Stress disorder, the psychological phenomenon experienced by many Vietnam veterans).

According to the AMA study, psychosocial symptoms related to battering are so common that they account for 64% of all females hospitalized with psychiatric problems. Another new report reveals that domestic violence victims make up at least 25% of all women receiving outpatient mental health services.

Research on women who attempt suicide has resulted in estimates that as many as 25% to 50% do so in response to domestic violence situations. Thankfully, an increasing number of these cases are being identified by alert medical providers who are referring victims appropriately to shelters and domestic violence counseling. One young woman, who nearly succeeded in taking her life recently, told a HOPE For Battered Women counselor, "I'm so tired. I just wanted peace. I wanted to die so he would leave me alone." Her attitude is not unusual. Many battered women are convinced there is no other way to escape their abuser.

For the battered woman, there does remain at the far end of the medical continuum the tragic possibility of death by either suicide or by murder at the hands of her partner. Approximately

➤ *Continued on Page 245*

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

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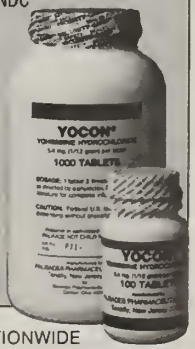
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



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Menopause

Daniel R. Mishell Jr, MD

The decline of ovarian function occurs gradually, and the cessation of menses is only one facet of the climacteric process. After the menopause, ovarian production of estrogen ceases and circulating levels fall dramatically.

Decreasing estrogen production leads to atrophy of the vagina, which can produce the distressful symptom of senile vaginitis or atrophic vaginitis. Estrogen deprivation also can cause the structures that support the uterus, the cardinal and uterosacral ligaments, to lose their tonicity and uterine descensus could occur. The trigone of the bladder and the urethra are embryologically derived from estrogen-dependent tissue, and estrogen deficiency can lead to their atrophy, producing symptoms of urinary urgency incontinence, dysuria, and urinary frequency. Another problem that can develop with decreased circulating estrogen levels is decreased synthesis of collagen that forms the connective tissue beneath the vaginal/epithelium. This change may decrease the support of the posterior urethro-vesicle angle and urinary stress incontinence can develop. Loss of collagen also can lead to clinically symptomatic cystoceles and/or rectoceles. These urinary symptoms can be alleviated or prevented with estrogen replacement therapy.

The pathognomonic symptom of menopause is the hot flush or flash, which is caused by a decrease in circulating estrogen levels. About 75% of all women going through menopause develop hot flushes. These flushes frequently occur at night, awaken the individual, and then produce insomnia. Hot flushes do not persist in most women for more than 2 to 3 years, and it is uncommon for a woman to have hot flushes that last more than 5 years after menopause. The most effective treatment for the hot flush is estrogen. Since so many of the hot flushes occur at night, it is advisable for the patient to ingest the estrogen tablet before bedtime.

Several studies have demonstrated that estrogen improves many psychological symptoms significantly better than placebo, particularly depression, in addition to relieving the hot flush and allowing the patient to sleep better. Estrogen users are less likely to develop dementia and Alzheimer's disease than non-estrogen users. Postmenopausal estrogen users have significantly thicker skin and a greater amount of collagen in the dermis than non-estrogen users. Systemic estrogen use can retard wrinkling and thinning of the skin postmenopausally.

Osteoporosis is defined as an asymptomatic reduction in the mass-per-unit bone volume (density) so that there is a significantly increased risk of fracture in the absence of trauma. Postmenopausal osteoporosis initially affects trabecular bone that is present in the vertebral column and distal radius. Osteoporosis develops more slowly in cortical bone, which is present in the limbs. About 1% to 2% of bone mass is lost each year after menopause. Osteoporosis is an asymptomatic disease, and its presence usually is not detected until a fracture occurs many years later. At least 25% of the bone needs to be lost before osteoporosis is diagnosed by routine x-ray examination, so other procedures such at CT scan or DEXA are used to detect this disorder.

In women undergoing a normal menopause, fractures begin to occur about age 60 in structures composed mainly of trabecular bone. By age 60, 25% of Caucasian and Oriental women develop spinal compression fractures. Loss of bone mass in cortical bone occurs at a much slower rate, so osteoporotic fractures of the femur usually do not begin to occur until about age 70 or 75. Patients with osteoporosis have a higher bone resorption rate than normal. With a few months of estrogen treatment, bone resorption rates returned to normal. Bone formation in patients with osteoporosis is normal before and after the estrogen therapy. The best way to prevent loss of calcium from bone in postmenopausal women is to administer exogenous estrogens.

Epidemiologic studies have shown that estrogen therapy reduces the amount of postmenopausal bone loss as well as the incidence of fracture. The minimum dosage of estrogen needed to prevent osteoporosis is 0.625 mg of conjugated equine estrogens, 0.625 mg of estrone sulfate and 0.5 mg of micronized estradiol. Ingesting the recommended daily intake of dietary calcium (800 mg to 1000 mg/day) during the adolescent years results in greater peak adult bone mass than occurs if insufficient calcium is ingested. Thus, postmenopausally with steady loss of bone, women who when premenopausal ingested the recommended intake of calcium are less likely to have sufficient reduction in bone density to cause fractures than those ingesting insufficient calcium. Dietary calcium supplementation without estrogen or weight-bearing exercise do not prevent postmenopausal bone loss.

In contrast to the increase in blood pressure that has been reported in some women using oral contraceptives, no such increase has been observed with use of estrogen replacement therapy. It is safe to prescribe estrogen replacement for post-

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menopausal women with hypertension, and if blood pressure increases while they are receiving this treatment, it is unlikely that the estrogen is the cause of the blood pressure elevation. There is no epidemiologic evidence of an increased incidence of thrombophlebitis or thromboembolism in postmenopausal estrogen users as compared with control subjects.

An abundance of epidemiologic data indicates that estrogen replacement therapy retards the development of atherosclerosis in postmenopausal women and reduces their risks of developing myocardial infarctions and cerebrovascular accident (CVA, stroke) by about 50%. The main mechanism whereby oral estrogen replacement retards atherosclerosis postmenopausally is prevention of the adverse alterations in endogenous circulating lipid levels that normally occur after the menopause, but estrogen also acts directly on the arterial system to improve blood flow.

Much concern has been raised about the neoplastic risks of postmenopausal estrogen replacement therapy, particularly breast and endometrial cancer, since these areas are estrogen target tissues.

The possibility exists that estrogen can stimulate a nonpalpable breast cancer, and carcinoma of the breast can exist in the preclinical state for as long as 8 years before it is palpable. Therefore it is advisable to obtain a mammogram to rule out subclinical breast cancer on all patients before initiating estrogen therapy and annually thereafter.

Many epidemiologic studies have investigated the relation of exogenous estrogen and the incidence of breast cancer. The epidemiologic data generally are reassuring as most studies show no increased risk of development of breast cancer among postmenopausal estrogen users, with the possibility of a slightly increased risk with long-term use. At present, it is not clear what effect if any the addition of a progestin to estrogen replacement therapy has on the risk of breast cancer.

Many epidemiologic studies have reported there is significantly increased risk of endometrial cancer developing in postmenopausal women who are ingesting estrogen without progestins as compared with non-estrogen users. The risk increases with increasing duration of use of estrogen and with increasing dosage. The endometrial cancer that develops in estrogen users is nearly always well differentiated and is usually cured by performing a simple hysterectomy. The risk of developing endometrial carcinoma for women receiving estrogen replacement can be markedly reduced by giving progestogens. The use of progestins lowers the chances of postmenopausal estrogen users' developing cancer of the endometrium, and therefore progestins should usually be given to postmenopausal women receiving estrogen if they have a uterus. The addition of a progestin to estrogen therapy does not appear to cause an increase of any other systemic disease and acts synergistically with estrogen to cause a slight increase in bone density. The use of synthetic progestins, however, may reverse the beneficial effect of estrogen upon serum lipids.

One of the primary reasons that postmenopausal women decide not to use estrogen, or discontinue its use, is the occurrence of uterine bleeding. For this reason, combination instead of sequential estrogen-progestin regimens are being increasingly prescribed as the former regime is usually associated with no bleeding after the first few months. For women without a uterus it is unnecessary to add a progestin.

Domestic Violence—A Medical Perspective
➤ *(Continued from Page 243)*

4,000 women are killed in the U.S. each year by their current or former partners, with the great majority of these murders occurring after the woman has ended the relationship. During the 1980s alone, an estimated 50,000 American women died as a result of domestic violence. Incredibly, this figure nearly matches the number of U.S. fatalities for the Vietnam war.

How are we as a society to respond to this new understanding of domestic violence as a medical crisis? One way to begin is by providing training for health care providers and insisting that medical schools include domestic violence education in their curriculums—medical providers have the potential to reach countless victims. Since almost all battered women must occasionally see family doctors, pediatricians, dentists, counselors, or others in the health care field, opportunities abound to recognize the indicators of abuse and to make referrals to life-saving resources.

In order to heighten the awareness of the medical community, and society at large, however, we must begin as individuals to shed our own heavy denial, which protects us from facing the true enormity, severity, and randomness of domestic violence. We must shatter our outdated stereotypes about why abuse occurs once and for all, and exactly who "those people"—victims and batterers—really are. In addition, we must stop blaming the victim by constantly asking, "Why does she stay?" and instead refocus our attention and indignation on the person using the violence by asking, "Why does he hit?"

Coming to terms with any unpleasant social truth is an uncomfortable experience. To let go of denial and grasp, for perhaps the first time, the truly devastating ramifications of domestic violence is especially disturbing. There is no going back. But until we as individuals are willing to risk some degree of personal discomfort in exchange for the truth, we will be robbing ourselves of golden opportunities to help many victims—perhaps even our own co-workers, neighbors, friends, sisters, daughters, or mothers—who may someday tell us that their injuries are from a "fall down the stairs" or from "playing volleyball."

Editor's Note
In 1989, after surviving a brutal attack in which she was beaten and stabbed by her estranged husband, Julie Owens left her career in special education and devotes her full-time efforts to the field of family violence. She gives domestic violence training seminars to professionals and trains officers and counselors in the Honolulu Police Department's DART program (Domestic Abuse Response Team).

Contoversies in Breast Cancer Diagnosis and Management

Lois Mastrofrancesco MD

Breast cancer is the most common cancer in women, and it is the single most common cancer in Hawaii, with 425 new cases diagnosed in 1993. For unknown reasons, the incidence of breast cancer has increased markedly in the past few decades and is expected to continue to do so indefinitely. Clinical research and technology have expanded our knowledge of breast cancer and our treatment options enormously, and few diseases have seen such changes in their primary management or engendered such controversy as breast cancer. Some of the most pressing controversies will be discussed with the view toward defining the current status and outlining strategies for resolution.

Screening for early breast cancer has been solidly established as a cost-effective method of reducing mortality from breast cancer. It is a cornerstone of the primary and preventive care of women. However, a consensus on the optimal screening schedule has not been reached. Further research regarding stratification of women in differing risk groups is needed to resolve these issues. Technology for the screening and diagnosis of breast cancer continues to improve; implementation of these new methods into our clinical armamentarium is ongoing.

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Breast-preserving therapy for early breast cancer has gained acceptance as the preferred alternative to mastectomy in early breast cancer. However, controversial and difficult issues remain concerning patient evaluation, selection, and technique for breast-preserving treatments.

Few subjects in breast cancer management have engendered more confusion in both the medical and the lay communities than adjuvant systemic treatment. Again, methods for optimal selection of candidates for this therapy is problematic. Hormone therapy has been particularly challenging in breast cancer, treatment and prevention, as well as postmenopausal replacement use. Hormone therapy is now the subject of a major research initiative from the National Institutes of Health.

Thus, it is clear that breast cancer is a common and yet heterogenous and complex disease for which there is a wide array of treatment modalities and options. Not surprisingly, it is the integration of treatment through coordination of multiple specialities that has moved to the forefront of breast cancer care. The multidisciplinary treatment approach will become our best effective strategy for dealing with this illness, and we should look to more coordinated care plans and centers to serve our breast cancer patients in the future.

Domestic Violence—Identifying Abuse

Shay Bintliff MD

Domestic violence is a widespread community health problem as well as a serious crime. One out of every 4 women seen in emergency departments is a battered woman, making domestic assault the most common cause of injury to women. Fifty percent of all women will be physically abused at some point in their lives by men with whom they live. More than 4,000 women are murdered by their partners each year, usually after they have just left the abusive relationship. Partner abuse also is seen in lesbian and gay relationships.

Domestic violence is defined as a pattern of coercive, controlling behavior that one person exercises over another, and which may involve physical, sexual, emotional, economic or psychological abuse, perpetrated with little or no regard for that individual's rights or feelings. Although often associated with domestic violence, the abuse is not brought on by mental illness, alcohol or drugs, stress or anger or loss of control. The only common denominator found in looking at characteristics of the victims is that they almost all are female. Many misconceptions about traits of victims are the results of battering, not the cause of it.

In order to be effective, all physicians must recognize the spectrum of presentations of the victims to the medical setting. Overt abuse and physical injuries are obvious if on exposed parts of the body; more subtle symptoms include stress, medical illnesses, psychological problems including drug and alcohol dependency and finally, suicide. Battering during pregnancy is

a special problem usually resulting in miscarriages. Health care providers often do not recognize and address the violence for a number of reasons: Time constraints and legal issues often are cited as the most common.

There now is a body of knowledge to assist physicians in the recognition and proper treatment and referral of victims of domestic violence. With proper training of emergency department and office staff, physicians can compassionately handle these patients with ease. In order to properly recognize the victims they must: 1) Assume that any woman with trauma has been battered until they have evidence to the contrary; 2) Routinely assess every female patient for possible abuse and provide each one with written domestic violence referral information appropriate for her locale; 3) Practice questioning every female patient about possible abuse until physicians feel really uncomfortable when they don't; and 4) Know that the woman's safety is the ultimate goal and, therefore, allow abused women to make decisions for themselves. Never coerce them or mandate conditions for providing help.

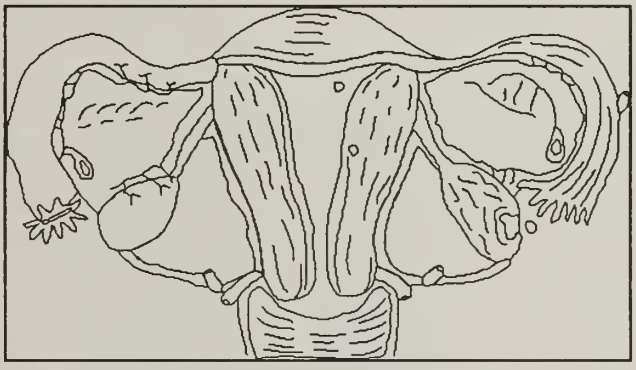
Physicians also must know the laws in their state regarding reporting, as they vary. However, it is not evident that mandatory reporting of abuse contributes to the safety of battered women or facilitates their access to appropriate resources and safety. We must ask ourselves two crucial questions: 1) Is she safer now, after her visit with a physician and 2) Has her sense of isolation been increased or decreased as a result of recognition of the abuse. Physicians will have succeeded if we have named the abuse and the victim has learned where to find help when she feels able and ready. Lastly we must not forget that in 70% to 80% of the homes where the woman is beaten, so are the children.

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Pelvic Pain

Thomas S. Kosasa MD

Pelvic pain can be a result of a gynecologic, urologic, or musculoskeletal problem. In women it is always important to order a serum pregnancy test (hCG-B) in order to rule out an ectopic pregnancy; this is the most life-threatening cause of pelvic pain. A CBC and ESR also should be obtained to rule out an infectious etiology for the pain.



Pelvic pain can be related to pregnancy and nonpregnancy causes. The ectopic pregnancy is the most important of the pregnancy causes of pelvic pain, but a threatened or inevitable abortion also may present as pelvic pain. Sophisticated ultrasound now can diagnose the majority of ectopic pregnancies, and 100% of the threatened or inevitable abortions.

Nonpregnancy-related causes of pelvic pain can be associated with problems of the cervix, uterus, tubes, or ovaries.

Nongynecologic causes of pelvic pain can be traced to urologic problems such as cystitis or a renal calculus. Appendicitis always must be considered in a woman with pelvic pain, but mesenteric lymphadenitis and diverticulitis also can be causes of pelvic pain.

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From a gynecologic point of view, evaluation of the cervix and working upward toward the uterus, tubes, and ovaries will diagnose the problems in almost every case. Cultures of the cervix for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* may rule out these pathogens as a cause for acute cervicitis, and even endometritis and salpingitis.

Ultrasound has been extremely helpful in ruling out degenerating myomas of the uterus and ovarian tumors and cysts on the tubes.

Ultrasound is safe, noninvasive, and is certainly a very important asset to a gynecologist.

The laparoscope has been the most important gynecological instrument used to diagnose pelvic pain; the uterus, tubes, and ovaries can be directly evaluated. Also, the appendix and large bowel can be evaluated to rule out acute or chronic appendicitis and diverticulitis.

Endometriosis, tubo-ovarian abscesses, and torsion of cysts can be diagnosed immediately with the laparoscope; most gynecologic procedures now can be performed without resorting to laparotomy.

The etiology of pelvic pain can be diagnosed with serum tests for hCG-B, CBC, and ESR, along with ultrasound and laparoscopy. Laparoscopy has the added advantage of being able to definitively treat almost every cause of pelvic pain.

Postpartum Preeclampsia Complicated by Acute Pulmonary Edema

Janet Nagamine MS, Janice Hansen MD, and Roger C. Ashmore MD

Peripartum acute pulmonary edema can occur in patients with preeclampsia-eclampsia. Although the pulmonary edema frequently develops in the postpartum setting, the preeclampsia-eclampsia typically occurs antepartum. Postpartum preeclampsia also can occur with acute pulmonary edema following a relatively normal gestation and delivery.

Introduction

Peripartum acute pulmonary edema is a rare but well-described complication in patients with preeclampsia-eclampsia and is associated with a significant increase in maternal and perinatal morbidity and mortality.[1,2] Although the acute pulmonary edema usually occurs in the early postpartum setting, the preeclampsia-eclampsia typically is present antepartum. This report describes a case of postpartum acute pulmonary edema in a patient with postpartum preeclampsia following a relatively normal gestation and delivery.

Case History

A 27-year-old mother came to the emergency department 3 days postpartum with features of preeclampsia and acute pulmonary edema. She initially developed peripheral edema 24 hours postpartum, followed by progressive respiratory insufficiency. When she entered the emergency department, she was in moderate respiratory distress with mild perioral cyanosis. Her examination revealed an initial blood pressure of 178/110, jugular venous distension, pulmonary rales, and 4+ pitting peripheral edema. The initial chest x-ray revealed diffuse bilateral interstitial infiltrates consistent with pulmonary edema and a normal cardiac silhouette. Her ECG showed sinus tachycardia and the initial room air blood gas was pH 7.50, pO_2 54, pCO_2 37, SaO_2 91%. Further laboratory studies included uric acid elevation (9.6 mg/dl), normal BUN and creatinine, no proteinuria on urinalysis, elevated CPK (350 IU/L) with normal MB fraction, and low serum albumin (2.2 g/dl). Her hematocrit was low (29.3%), but not significantly changed from previous studies. Emergent echocardiogram revealed normal left ventricular size and systolic function with moderate mitral insufficiency, normal left atrial size, and no evidence of left ventricular hypertrophy.

The patient's prenatal course was complicated by preterm labor at 27 weeks of gestation, which required hospitalization and therapy with intravenous magnesium sulphate and subcutaneous terbutaline therapy. She was maintained as an outpatient on oral terbutaline until 37 weeks, when tocolytics were stopped. Two and a half weeks later she delivered a full-term baby without complications during labor and delivery. Review of the patient's labor, delivery, and early postpartum course revealed no excessive intravenous fluid administration or blood product transfusions. Her previous obstetrical history included habitual abortions for which she was treated with aspirin and progesterone therapy. Other pertinent medical history included stage II Hodgkin's disease 4 years prior to this admission, treated with mediastinal radiation therapy (4000 rads) and chemotherapy with Adriamycin (216 mg total dose), bleomycin, DTIC, and Velban. The patient had no evidence of recurrence of Hodgkin's disease and no prior history of hypertension, diabetes, renal insufficiency, or cardiopulmonary problems.

The patient was admitted to the coronary care unit and improved dramatically with diuresis and blood pressure control. She also was started on intravenous magnesium sulphate for seizure precautions. She was discharged in excellent condition following 5 days of hospitalization.

Discussion

Possible etiologies of early postpartum pulmonary edema include postpartum cardiomyopathy, pulmonary edema associated with tocolytic therapy, and pulmonary edema in patients with preeclampsia-eclampsia. This patient came to the emergency department 3 days postpartum in acute pulmonary edema and with evidence of preeclampsia (hypertension, elevated uric acid, and generalized edema). In a previous case series describing 37 patients with preeclampsia-eclampsia complicated by pulmonary edema, all patients had severe preeclampsia-eclampsia antepartum.[1] Interestingly, however, most patients in this series developed pulmonary edema in the early postpartum setting (70% within 72 hours after delivery). The incidence of preeclampsia with postpartum onset is not well defined. Simi-

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larly, we are unaware of previous reports of postpartum preeclampsia complicated by acute pulmonary edema, as in our patient.

The possible mechanism(s) of pulmonary edema in patients with preeclampsia is unclear. The patients typically have generalized arterial spasm with elevated systemic vascular resistance.[3] The plasma oncotic pressure, which decreases in normal pregnancy, has an accentuated decline in patients with preeclampsia. This combination of increased left ventricular afterload and decreased plasma oncotic pressure predisposes these patients to pulmonary edema. The postpartum mobilization of extracellular fluids and the frequent administration of excessive intravenous fluids in the peripartum setting may explain why most patients develop pulmonary edema postpartum. Impaired capillary endothelial permeability has also been postulated as a contributing factor in these patients.[4]

The incidence of pulmonary edema associated with tocolytic therapy is as high as 4.4%.[5] Symptoms usually develop dur-

➤ *Continued on Page 260*

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Contraception

Daniel R. Mishell Jr, MD

The contraceptive methods most commonly used in the U.S. are, in order of popularity, oral contraceptives (OCs), condoms and spermicides, withdrawal, diaphragms, rhythm, implants, and intrauterine devices (IUDs). Also a 3-month progestin injection was recently approved for use in the U S. Over a period of several years, pregnancy rates were <1% a year for oral contraceptives, IUDs, implants, and the progestin injection, and about 5% a year for the other methods.

Oral contraceptives.—Effectiveness does not differ significantly among the various combination OCs; if no tablets are omitted, the pregnancy rate is <0.2% at the end of 1 year. Low-dose estrogen pills have fewer side effects than the older high dose formulations and should be used by nearly all women. Only those who are taking some other medications, particularly drugs for epilepsy, should use the higher estrogen dose pills. The newer lower dose OCs have very few health risks and many health benefits unrelated to contraception.

Healthy women who do not smoke can take low-dose OCs continuously until menopause. *However, in women over age 35 who smoke cigarettes or have other risk factors for heart attack (eg, untreated hypertension or vascular disease) and use OCs, an increased risk of death has been reported from stroke and heart attack.* No such risk has been reported with low dose pills, but it is still safer for women over 35 not to use them if they smoke or have other vascular disease. The risk of stroke was previously estimated to be greater in OC users, but recent studies in which pills with lower doses of estrogen were used have shown the incidence to be no different in healthy OC users than in healthy nonusers of similar age.

The risk of breast cancer is not increased in OC users overall or in high risk subgroups such as those with a family history of breast cancer or cystic changes in the breast. After 35 years of OC use in humans, vast amounts of information have been amassed regarding the cancer effects of OCs. Although some studies show an increased risk of breast cancer in certain groups of OC users, mainly young women under 35, most studies do not confirm such an association and actually show a decreased risk of breast cancer association with OC use in women 45 to 55 when the disease is more common. Several other studies show that cervical cancer is increased in OC users, particularly those who have used OCs for >5 years. A causal relationship has not been established, but such women need to have Pap tests performed at least annually. A number of studies have shown that OC use decreases the risk of the lethal uterine and ovarian cancers by about 50%, and this reduced risk persists after OC use is stopped. Other documented noncontraceptive health benefits of OC use include a decreased incidence of abnormal bleeding, dysmenorrhea, premenstrual tension, anemia, cystic breast disease, and functional ovarian cysts. A reduced incidence of tubal pregnancy and tubal infection associated with OC use should decrease infertility. OC users also have fewer cases of rheumatoid arthritis and osteoporosis than nonusers.

Implants.—Plastic capsules containing levonorgestrol are inserted under the skin in the upper arm; when released, the drug inhibits ovulation and prevents sperm from penetrating the thick cervical mucus. A small incision is made under local anesthesia in the office or clinic. Then 6 capsules are inserted through a needle in a fanshaped pattern to obtain sufficiently high blood levels of the hormone for effective contraception. The incision is closed without sutures. The capsules remain in place and are effective for 5 years. The major side effects are irregular uterine bleeding and no bleeding. Headache and weight gain also could prompt premature removal of the capsules. With proper counseling, many women choose to continue using this method of contraception after 5 years, but because the capsules are not dissolved in the body, they need to be removed and replaced. Removal is similar to insertion but more difficult because scarring develops around the capsules. Normal ovarian activity and return of fertility resume immediately after removal.

Injections.—Depo-medroxyprogesterone acetate (DMPA), a long-acting injectable progestin, is given as a injection once every 3 months in the muscle of the buttock or upper arm. The major side effect of DMPA is complete disruption of the menstrual cycle. As duration of therapy increases, the incidence of frequent bleeding steadily declines and the incidence of no bleeding steadily increases, so that at the end of 2 years about 70% of the women treated with DMPA have no menstrual bleeding.

Additional side effects include slight weight gain and, because of the long duration of action of the drug, there is a delay in the return of fertility for as long as one year, but it does not cause sterility. Use of DMPA does not increase the risk of developing any cancer, including breast cancer, and the risk of uterine cancer is greatly decreased. DMPA may cause temporary osteoporosis which disappears after the injections are stopped.

Intrauterine device (IUD).—In contrast to other contraceptives, only about 1 million women in the U.S. use IUDs for contraception, even though they are very effective. IUDs have some advantages over OCs: Their effects are limited to the female genital tract, and insertion requires only one decision by

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the patient. Only 2 types of IUDs currently are marketed in the U.S.; the progesterone-releasing IUD needs to be inserted annually, the copper-bearing T380A is effective for at least 10 years. Pregnancy rates at the end of 10 years of use with this device are <2%.

The IUD does not act by causing an abortion each month. It acts mainly by killing sperm and preventing fertilization of the egg. An inflammatory reaction in the cavity of the uterus is generally accepted as the main cause of the contraceptive effect. Bacteria are present in the uterus for 24 hours after insertion of an IUD, and although the cavity rapidly becomes sterile, inflammation persists after the bacterial infection disappears. The inflammatory reaction ceases when the IUD is removed and fertility returns promptly. Bleeding and pain are the major medical reasons for removing an IUD; these problems account for >50% of all discontinuances and occur in about 15% of patients during the first year of use and 7% during the second year of use. The expulsion rate for most devices is greatest during the first year (about 10%) and occurs most frequently in the first few months after insertion. *About 20% of expulsions are unnoticed and can be followed by an unintended pregnancy;* therefore, a plastic string is attached to the IUD so the user can check periodically, especially after menses, to see that the device has not been expelled.

Perforation of the uterus is a potentially serious but uncommon problem; for devices in current use it occurs in about 1/1000 insertions. Perforation always occurs during insertion. Perforation should always be suspected if the patient cannot feel the string but did not notice that the device was expelled. All IUDs in the abdominal cavity should be removed, as they can cause bowel scarring.

Infection of the endometrial cavity occurs at the time of IUD insertion and clears after 24 hours. IUD tail strings do not provide continuous access for bacteria to enter the uterus. Pelvic infections occurring after an IUD has been in place for ≥30 days are sexually transmitted and are not caused by the IUD; they can be treated without removing it, unless the infection is severe or the patient is pregnant. Routine antibiotic use during insertion is not cost-effective. An IUD should not be inserted if there is clinical evidence of cervical infection. Individuals at high risk for developing PID including those with a prior history of PID, and women with multiple sexual partners should use condoms or a diaphragm together with an IUD.

Pregnancies overall are effectively prevented with IUDs; however, a woman who becomes pregnant with an IUD in place has about a ten-fold greater than normal (or 3% to 9%) chance of having a tubal pregnancy. If a woman who becomes pregnant with an IUD in place wishes to continue the pregnancy and the tail string is visible, the IUD should be removed, since the spontaneous abortion rate is lower after removal of the device. Several long-term studies have shown no evidence that IUDs increase the risk of cervical or uterine cancer.

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Home-Based Family Support Services: Part of the Comprehensive National Plan to Improve the Overall Health and Safety of Children

Vicki A. Wallach RN, MPH, ACSW

As a nation, we face enormous political, social, and economic challenges in the areas of family violence, substance abuse, mental health disorder, homelessness and chronic unemployment. These multidimensional problems are seen to have etiologic roots in family systems that are plagued with pervasive poverty, high stress and social isolation. The incidence of child abuse and neglect has reached crisis proportions with 2.9 million reports during the preceding year. Further, the national rate of child maltreatment fatalities has risen steadily over the past 6 years. In 1993, an estimated 1,299 children were the victims of fatal interpersonal violence.[1]

The former U.S. Surgeon General C. Everett Koop MD, who is credited with publicizing family violence as a public health problem, has advocated for systematic prevention efforts to address the antecedents and consequences of violence.[2] An analogy can be made between the field of immunology, which provides children with exposure to attenuated disease-producing organisms in calculated doses in order to reduce vulnerability to illness, and systematic support services that enhance a family's ability to cope with potentially noxious, difficult life circumstances. According to Garbarino, child maltreatment can be prevented by thwarting the necessary conditions for child abuse and neglect, thereby *disarming* the problem.[3]

While there is no single approach that can address the range of family needs associated with maladaptive parenting, child maltreatment can be significantly reduced if a continuum of supportive, educational and therapeutic services is made available to families around the time of birth.[4] These services utilize models of practice that attend to the interrelationships in families' basic life conditions, the parents' well-being as individuals, specific aspects of parenting capacity, and healthy child development. Home visitation, increasingly regarded as a fundamental component of these programs, has been found to reduce the incidence of child abuse and neglect and improve the short and long-term health and well-being of children and families.

Conclusions drawn from empirical research suggest that the provisions of carefully conceptualized and implemented home visitation services for pregnant women and parents with young children can improve maternal and child health.[5] This evidence has been convincing; the U.S. Advisory Board on Child Abuse and Neglect, in summarizing its recommendations for dealing with the child abuse crisis in America, placed neonatal universal home visit programs as a critical first step in designing a comprehensive plan to improve the overall health and safety of children.[6] Further, in 1989 the National Commission to Prevent Infant Mortality cited home visiting as a core component in its strategy to improve birth outcomes in the United States,[7] and in 1991 the General Accounting Office issued a report addressing the need for the expansion of federal funds allocated to home visiting services.[8]

Hawaii's Healthy Start program, home-based services to families that are identified as being at risk for child abuse and neglect, is the model for the nation-wide effort of the National Committee to Prevent Child Abuse and Ronald McDonald Children's Charities to create *Healthy Families America*. Nearly all 50 states now have established task forces to advance the efforts of the *Healthy Families* initiative.[9]

Despite bold service initiatives such as *Healthy Families America*, the challenges faced by our nation are enormous as it continues to move forward in an effort to reduce the vulnerability of American children who are being raised in social and economic impoverishment that jeopardizes their well-being. In particular, there is an apparent relationship between the poverty level of the child and every aspect of compromised family functioning. Poor child outcomes, ranging from infant mortality, low birth weight, child abuse, inadequate parenting, and childhood developmental delays, compel us to continue to explore conceptual models and service-oriented strategies that could maximize positive changes in families. Schorr[10] has outlined the attributes of successful programs that make a difference in the lives of overburdened families: Offer a broad spectrum of services; view the child in the context of the family, and the family in the context of its surroundings; professionals are perceived by those they serve as people who care about them and respect them, and as people they can trust; services are coherent and user-friendly; services adapt or circumvent tradi-

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tional professional and bureaucratic limitations as needed; professionals can redefine their roles to respond to overwhelming and often unarticulated human needs. To summarize, programs that succeed in helping at-risk families are intensive, comprehensive, and flexible.

As a nation, we have only begun to define the parameters of promising family-focused service strategies that can be designed to meet the social and psychological needs of families. In addition, the integration of intervention across health, education, and human services is emerging as a basic service paradigm with the growing recognition that risk factors identified by each service system stem from the same precipitants. The Healthy and Ready to Learn Center, born out of the vision of Calvin Sia MD and administered by the Hawaii Medical Association, exemplifies this interdisciplinary model of service. Increasingly, we are accruing the tools to design solutions to complex problems that seem out of reach. Our children's futures depend on these coordinated efforts on their behalf.

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Premenstrual Syndrome: A Guide for the Clinician

Enrico G. Camara MD

"A menstrous woman would dull a mirror with a look and the next person to look into it would be bewitched." - Aristotle

In 1931 an American gynecologist named Frank[1] described 15 cases of women who had premenstrual symptoms. Thereafter, many studies on premenstrual syndrome (PMS) followed but most were flawed by serious methodological problems, including poor patient selection, no universal definition of the syndrome, mainly open uncontrolled studies, and retrospective rating of symptoms, which tends to overestimate the prevalence of PMS.[2]

The third edition of the *Diagnostic and Statistical Manual of Mental Disorders* proposed the term Late Luteal Phase Dysphoric Disorder (LLPDD), which refers to the mood disturbance of premenstrual syndrome and excludes women who have symptoms throughout the luteal phase of the cycle. In the latest edition of this manual (DSM IV), this condition was not granted an official category. Instead, it was renamed Premenstrual Dysphoric Disorder (PDD) and relegated to an appendix that contains a number of proposals for new categories and axes provided for further study. Table 1 summarizes the criteria for PDD. In this article, PMS is used interchangeably with PDD.

PMS remains a controversial issue. It is seen by some as a way to reduce the status of women, by linking the normal ovarian cycle to the impairment of women's ability to cope.[3] Others have gone further, labeling psychiatry as an institution that exerts social control over women by influencing and reflecting societal definitions of sex-role-appropriate behavior. By this view, definitions of PMS reflect ideology rather than science.[4]

Yet there are a substantial number of women who experience significant negative changes that vary with the menstrual cycle. It is estimated that up to 90% of women report isolated or minor premenstrual changes.[5] Around 5% of symptomatic women report symptoms severe enough to produce long-term effects on their well-being and family, social and work relationships. Symptoms may be so severe that they lead to completed suicide, suicide attempts, and acts of violence against others.[6] There is also a real possibility that recurrent perimenstrual mood changes of this kind can increase the likelihood of chronic mood disorders in susceptible individuals.[7]

Etiology

A number of etiological theories for PMS have been suggested that include biological, psychodynamic, family, social, and cognitive components.[8] The current consensus is that normal ovarian function is the cyclical trigger for biochemical or neurotransmitter events within the central nervous system and other target tissues which cause the symptoms. Studies of platelet and whole blood serotonin concentration suggest serotonin deficiency in patients with PMS.[9]

Evaluation

It is important to have patients with suspected PMS prospectively rate and record their symptoms and the severity on a daily basis. Table 2 lists symptoms that are important to track. Other factors to include in the daily diary are basal body temperatures (to keep track of ovulation), weight, menstruation, and stress factors. Using DSM-IV criteria, the diagnosis is only confirmed by the use of prospective ratings during the course of 2 menstrual cycles. Recording symptoms retrospectively is inaccurate and

Table 1.—DSMIV Research Criteria for Premenstrual Dysphoric Disorder

A. In most menstrual cycles during the past year, 5 or more of the following symptoms were present for most of the time during the last week of the luteal phase (the period between ovulation and onset of menses), began to remit within a few days after the onset of the follicular phase (the period between onset of menses and ovulation), and were absent in the week post menses, with at least one of the symptoms being either 1, 2, 3 or 4.

1. Markedly depressed mood, feelings of hopelessness, or self-deprecating thoughts.
2. Marked anxiety, tension, feelings of being "keyed up" or "on edge."
3. Marked affective lability, eg, feeling suddenly sad, tearful; increased sensitivity to rejection.
4. Persistent and marked anger or irritability or increased interpersonal conflicts.
5. Decreased interest in usual activities, eg, work, school, friends, hobbies.
6. Subjective sense of difficulty in concentrating.
7. Lethargy, easily fatigued or marked lack of energy.
8. Marked change in appetite, overeating, or specific food cravings.
9. Hypersomnia or insomnia.
10. A subjective sense of being overwhelmed or out of control.
11. Other physical symptoms, such as breast tenderness or swelling, headaches, joint or muscle pain, a sensation of bloating, and weight gain.

B. The disturbance markedly interferes with work or school or with usual social activities and relationships with others.

C. The disturbance is not merely an exacerbation of the symptoms of another disorder, such as Major Depressive Disorder, Panic Disorder, Dysthymic Disorder, or a Personality Disorder (although it may be superimposed on any of these conditions).

D. Criteria A, B, and C must be confirmed by prospective daily ratings during at least 2 consecutive symptomatic cycles.

Table 2.—PMS Symptoms for Prospective Charting

Physical	
	Abdominal distention or bloating
	Mastalgia
	Headache or migraine
	Cramps
	Muscle/joint pains
Psychological	
	Anger/irritability
	Depressed mood
	Crying
	Suicidal thoughts
	Energy levels
	Food cravings, appetite
	Feeling nervous
	Feeling out of control
	Feelings of violence/aggression
	Poor impulse control

should not be used as a basis for treatment.[10] The process of having a patient keep a daily chart also helps her feel that her symptoms are validated and that she participates in the process of evaluation and treatment.

It is important to rule out other medical, gynecologic, and psychiatric illnesses; endocrine disorders or premenstrual exacerbation of another underlying disorder should be considered. Examples include seizure disorders, thyroid disorders, cancer, systemic lupus erythematosus, anemias, and various infections. These general medical conditions can be distinguished from PMS by history, physical examination, and laboratory testing. Polycystic ovarian disease and endometriosis also should be ruled out. The symptoms of these disorders could present as PMS, but the underlying gynecologic disease should be treated first.

It is important to rule out other psychiatric illness such as an affective disorder. The transient mood changes that many women experience around the time of their period should not be considered a mental disorder; however, when persistent with every cycle and severe enough to markedly interfere with work or school or with usual social activities and relationships, addressing the mood component becomes crucial.

Premenstrual exacerbation of a current mental disorder (eg, mood disorders, anxiety disorders) needs to be ruled out. Fifty percent to 60% of patients presenting to PMS clinics will meet criteria for other psychiatric disorders.[11,12] Treatment of the underlying disorder often leads to satisfying results. It also is important to screen for histories of physical or sexual abuse and substance abuse disorders. A formal psychiatric evaluation may help to clarify the diagnosis in difficult cases.

O'Brien[6] described a gonadotrophin-releasing hormone (GNRH) analogue test that is useful in diagnosing women who have severe symptoms and in whom the diagnosis remains in doubt. Goserelin, a GNRH agonist analogue, is given monthly for 3 months to eliminate cyclical ovarian function completely. Complete elimination of symptoms implies that the symptoms are solely dependent on ovarian activity, and the diagnosis is PMS. If symptoms continue into the third month, an underlying psychiatric problem could be present.

Treatment

The etiology of PMS is certainly more complex than the combination of ovarian activity and neurotransmitter changes. Other factors may play a role, including environmental, psychosocial, and personal factors. Stress, interpersonal relationship problems, underlying psychopathology, personality, self-esteem, general health and well-being may all be important. Therefore, nonspecific measures such as counseling, stress management, relaxation techniques, support groups, vitamin therapy, dietary change, and exercise can be helpful. (Table 3)

There is a greater reactivity to stress and a higher level of arousal during the premenstruum.[13] A recent study reported remission of symptoms in 58% of patients participating in a group behavioral treatment, which included instruction on diet, exercise, progressive relaxation, and stress reduction, with another quarter of subjects reporting 50% reduction in symptoms.[14]

Dietary change, vitamin therapy and exercise all improve general health and self-esteem and may increase women's tolerance to premenstrual symptoms. Meals to combat premenstrual hypoglycemia have no justification. Vitamin B_6, calcium and magnesium may be useful in that they are cofactors in neurotransmitter synthesis (eg, conversion of tryptophan to serotonin).[15] Evening primrose oil (efamol), a prostaglandin synthesis precursor, may be helpful in relieving breast symptoms and depression in some patients.[16,17]

Table 3.—Treatment Approaches for PMS/PDD

Treatment	Dosage
Non-Pharmacological Approaches	
Counseling	
Stress management	
Relaxation techniques	
Support groups	
Exercise	
Dietary and vitamin therapy	
Pharmacological Approaches	
Pyridoxine (B6)	100 mg daily
Progesterone	Pessaries/suppositories 400 mg to 800 mg up to twice daily
Spirinolactone	100 mg daily in 2nd half of cycle
Fluoxetine	20 mg daily (or other SRI at equivalent dose)
Clomipramine	25 mg to 75 mg daily
Buspirone	10 mg to 30 mg daily in 3 divided doses
Alprazolam	2 mg to 4 mg daily in 3 to 4 divided doses
Eliminating the Ovarian Trigger	
Oral contraceptives	
Danazol	100,200,400 mg daily
GNRH analogues	3 to 6 mg sc every 28 days for up to 6 months
Surgery	total hysterectomy with bilateral salpingo-oophorectomy

There has been widespread use of progesterone based on studies suggesting that estrogen is high relative to progesterone in patients suffering from PMS. However, randomized, double-blind placebo trials have not supported their efficacy.[18]

Most women who develop premenstrual bloating and abdominal distention in the luteal phase do not show increases in weight,

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Treatment Options for Postmenopausal Osteoporosis

Frank Singer MD

Introduction

Osteoporosis is a process or state of bone loss that results in increased risk for bone fractures. The most important sites of fracture are the spine and hip, although distal forearm and rib fractures are not uncommon.

Sometimes 2 syndromes of osteoporosis are defined: Type I refers to postmenopausal osteoporosis, and Type II is senile osteoporosis.[1] Senile osteoporosis is the gradual process of bone loss that occurs as a result of aging in both women and men. Normally, bone is built up until peak bone mass is attained between the ages of 20 and 35, after which there is a slow progressive loss of bone.[2] Hip fracture is the characteristic consequence of senile osteoporosis.[1]

Postmenopausal osteoporosis is a process that actually begins several years prior to the cessation of menstruation, ie, perimenopausally. The period of most rapid bone loss occurs during the first 5 years after menopause, with continued effects for approximately 3 to 5 years thereafter.[2] Interestingly, men who become hypogonadal during adulthood also go through a period of accelerated bone loss that results in osteoporosis.[3]

The process of postmenopausal osteoporosis probably affects all women to a variable degree. It has been proposed that there are fast losers and slow losers, but this concept has not been established. Bone mineral density can be measured safely and easily to determine a woman's fracture risk.[4] However, relatively high postmenopausal bone density might be a result of high peak bone mass and might not adequately reflect a person's rate of bone loss.

There are several treatment options for postmenopausal osteoporosis: A variety of estrogen preparations, an oral bisphosphonate (etidronate), vitamin D, and calcitonin. Calcium supplements should be a part of any treatment regimen; but in itself is not an adequate treatment.[5-6] Calcium should be supplemented to achieve an intake of 1,500 mg a day; taking it with food improves absorption. It is important to read the label of a calcium supplement carefully to determine its elemental calcium content.

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Estrogen Replacement Therapy

The best-established prevention and treatment for postmenopausal bone loss and fracture is estrogen replacement therapy (ERT)[7] and estrogen is available in many forms.

Historically, the most commonly used is conjugated estrogens (Premarin). The dose of conjugated estrogens usually recommended for ERT is .625 mg daily,[7] which provides full protection against postmenopausal osteoporosis.[8] This is a lower dosage than was commonly prescribed 10 or 20 years ago, but also may be higher than is necessary to treat osteoporosis. There are limited data to suggest that .3 mg of conjugated estrogens combined with 1,500 mg a day of supplemental calcium may produce an equivalent effect.[9] An important reason to prefer the higher dose, however, is its advantage in improving cholesterol metabolism.

Epidemiological data have strongly suggested that ERT is associated with reduced risk for coronary artery disease (CAD).[10-12] Approximately 70% of the women in these studies were using Premarin, which has been shown to lower LDL-cholesterol levels substantially when given in a daily dose of .625 mg; HDL-cholesterol levels are increased slightly. Increasing the dose to 1.25 mg produces little improvement in these results.[13] There appears to be no data indicating that a dosage of .3 mg provides similar benefit. Since lowering LDL-cholesterol levels is known to reduce risk for coronary events, it is very likely that this is one mechanism through which ERT prevents CAD.[13]

The dose response of other forms of estrogen has been studied in an attempt to determine the dosage required to attain full protection against postmenopausal osteoporosis. Piperazine estrone sulfate (Ogen) will provide full protection when given in a dose of 1.25 mg daily. A dosage of .625 mg also provides substantial benefit and was originally thought to be fully adequate,[14] but longer term studies demonstrated that the higher dosage was necessary.[15] The dose-response relationship between this form of ERT and lowering of LDL-cholesterol levels has not been studied.

Transdermal estradiol (Estraderm) is available for the prevention of osteoporosis and is available in 2 doses: 50 mcg and 100 mcg. Here again, the lower dose provides some protection, whereas the higher dose is fully adequate.[16] Transdermal estroadiol has little effect on lipoprotein metabolism,[13] which is an obvious disadvantage, in general. Occasionally, transdermal estradiol may provide an advantage to women with

hypertriglyceridemia, in whom oral estrogen use may exacerbate this problem. Transdermal estradiol, unlike some oral estrogens, also does not raise levels of various liver proteins such as renin substrate.[17]

Oral micronized estradiol (Estrace) is available for ERT. Two mg of oral estradiol is equivalent to .625 mg of conjugated estrogens in its effect to lower LDL-cholesterol levels.[13] Oral estradiol in a daily dose of .5 mg to 2.0 mg provides protection against postmenopausal osteoporosis, but it is unclear which dosage is the minimum required to provide full protection.[18]

There are other estrogen preparations that are being marketed for ERT; for example, esterified estrogens. Little is known about appropriate dosing of esterified estrogens, although they are being used as a substitute for conjugated estrogens. These 2 products are not equivalent in terms of their USP formulations: Conjugated estrogens have 35% equine estrogens; esterified estrogens have 10%.[19]

Treatment Alternatives

Why consider alternatives to ERT? There are several reasons. Estrogens are believed to be contraindicated in patients with a history of breast or endometrial cancer, and in patients with a history of thrombo-embolic disease.[20] Oral estrogens probably should not be given to women who are at risk for severe hypertriglyceridemia.

Postmenopausal estrogen use can result in menstrual bleeding. When medroxyprogesterone acetate (Provera) is used together with estrogens in a cyclical fashion (eg, 10 mg on days 15 to 25 of the cycle) monthly withdrawal bleeding is to be expected. When lower doses of this progestagen (eg, 2.5 mg to 5.0 mg) are used concurrently with the estrogen throughout the month, bleeding is less frequent.

Concurrent estrogen and progestagen use results in unwanted menstrual bleeding more often in women who begin ERT shortly after menopause than in women who are older. Sometimes, a lower dose of the estrogen and/or a higher dose of the progestagen may eliminate this problem. Nevertheless, for some women, menstrual bleeding remains an unacceptable side-effect of ERT.

Some women develop breast tenderness when they start taking estrogens after menopause. This occurs more often at higher doses, but can occur in some women at relatively low doses. These women frequently discontinue ERT because of the discomfort.

Some women fear the development of breast cancer as a consequence of ERT. Currently, the relationship between ERT and the risk of breast cancer is somewhat controversial. One meta-analysis arrived at a relative risk of 1.3 in association with ERT.[21] It is unlikely that this meta-analysis underestimates the risk. Although the use of a progestagen eliminates the increased risk of endometrial cancer resulting from the use of estrogen alone,[22] the notion that the progestagen also attenuates the risk for breast cancer is without foundation.

In responding to a patient's fear of ERT causing breast cancer, the physician is advised to try to determine whether this fear is deeply rooted and unshakeable or is open to influence. The epidemiological data strongly suggests that women who use ERT live longer than those who do not, with reduced risk for CAD.[12,23] But not every patient is equally impressed. In particular, ERT may not be acceptable to a woman whose mother or sister had breast cancer.

The alternatives to ERT include etidronate, vitamin D, and calcitonin. Among the 3, use of etidronate[24-25] and vitamin D[26] have been shown to prevent loss of bone mineral density and occurence of fracture, whereas salmon calcitonin use has been associated with prevention of bone mineral density loss only.[27]

Etidronate (Didronel) is given in a dose of 400 mg a day for 2 weeks out of every 3 months.[24-25] Calcium, magnesium, and a variety of foods interfere with its absorption, so it is best taken on an empty stomach at bedtime. The response to etidronate (and other alternative treatments) should be monitored after a year of therapy to be assured it is working. Ineffective treatment could be related to inadequate absorption.

Vitamin D is another treatment that can be given orally. Although its efficacy is controversial, at least 1 study has demonstrated that calcitriol (Rocaltrol) taken in a dosage of .5 mcg daily preserves bone mineral density and prevents fractures.[26] The risks of calcitriol are related to the possible developments of hypercalcemia and/or hypercalciuria. Therapy should be monitored and the dosage of calcitriol reduced if serum calcium exceeds the upper limit of normal or if 24-hour urinary calcium is excessive, ie, >250 mg to 300 mg.

Calcitonin must be given parenterally and the initial dose should be low. Flushing and nausea commonly occur in the beginning, but often diminish or disappear with continued therapy. The dosage should be gradually increased to 100 IU of salmon calcitonin (Calcimar, Miacalcin) a day.[27] Human calcitonin also is available, but the equivalency of dosing is uncertain, the cost is higher, and it has no apparent clinical advantage.

The best-established prevention and treatment for postmenopausal osteoporosis is estrogen replacement therapy. Premarin has the advantage of being the estrogen most closely associated with the coronary-protective effects observed in epidemiological studies and has a beneficial effect on the lipid profile in most women. However, other estrogen preparations, when used at appropriate dosages, provide equal protection against osteoporosis and also can be cardioprotective. For women who should not or wish not to use estrogen, currently available alternative treatments for osteoporosis include etidronate, vitamin D, and calcitonin. Calcium supplementation to maintain a total intake of 1,500 mg a day also is generally advised.

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Stroke in Women

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Stroke is the leading cause of disability and is the third leading cause of death in women in the United States. Of the 500,000 patients affected by a new stroke, nearly 200,000 will affect women.[1] In addition, approximately 90,000 American women die each year from a stroke, accounting for 60% of all stroke deaths.[1] The mortality rate from stroke is higher in women; the death rate from stroke is 16%, while it is 8% in men.[2] The reason for the higher death rate is the older age of women at the time of their initial stroke. The impact of stroke in women extends beyond the individual, since women are often the primary care giver to children and are often responsible for the care of an aged or ill spouse.

There are various risk factors that have been identified for stroke; however, except for some unique situations such as pregnancy and the use of oral contraceptives, the risk factors for stroke appear to be the same for men and women. In the last few decades, there has been a decline in the mortality rate from stroke, primarily because of better control of risk factors such as hypertension. However, the rate of the decline has slowed both in men and women.

Hypertension is the leading risk factor for stroke in both men and women. The prevalence of hypertension as a risk factor is two times higher in Afro-American women as compared to Caucasian women.[3] Treatment of hypertension, including isolated systolic elevations, effectively reduces the risk of stroke.[4]

Cigarette smoking is another treatable risk factor for stroke—smoking is a major risk factor for the development of carotid atherosclerosis. Women cigarette smokers have a three-fold increase in the risk of stroke compared to nonsmokers. The risk of stroke increases with the number of cigarettes smoked.[5] The risk of stroke can be reduced by smoking cessation.[5]

After hypertension, heart disease is the most important risk factor for stroke. Cardiac disease accounts for approximately 20% of strokes. Atrial fibrillation is more common in men in all age groups[6]; however, after age 80, the incidence in women approaches that of men.[6] The Stroke Prevention in Atrial Fibrillation (SPAF) study has suggested that in patients less than 75 years of age with no risk factors of congestive heart failure, hypertension or prior thromboembolism aspirin can be recommended.[7] Those less than 75 years with risk factors should be treated with long-term, low-dose warfarin therapy. Patients over age 75 years present a dilemma because the protection is not great with either aspirin or warfarin. The SPAF III study is in progress to further study this question.

Mitral valve prolapse is twice as common in women as in men[8]; however, women do not seem to be more prone than men to have a stroke with this condition.[9]

Oral contraceptives with a higher dose of estrogen have been associated with a 9-times greater incidence of stroke.[10] Women who are over age 35 and are hypertensive or are smokers have the greatest risk of having complications. The lower-dose estrogen preparations effect a lower risk of stroke.[11] Postmenopausal use of conjugated estrogens appears to reduce the risk of vascular disease.[12]

Pregnancy increases the risk of stroke by 3 to 13 times.[13] Some potential etiologies include hypertension, cardiac lesions, including peripartal cardiomyopathy, diabetes, hypercoagulability, or amniotic, fat or air emboli.

Fibromuscular dysplasia (FMD), an uncommon non-atherosclerotic vasculopathy, is more common in women. In one series, 95% of the persons affected with FMD were women.[14]

Therapy for stroke prevention includes aspirin, ticlopidine, or warfarin. Risk factor modification of the treatable causes of stroke is important. In stroke in women, special attention often needs to be paid to assessing the support systems for care of children, a dependent spouse, and for household responsibilities.

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total body water, extracellular fluid volume, total exchangeable body sodium, or plasma volume.[6] Diuretics are widely used, however, they might be most helpful in the subgroup of women with premenstrual weight gain.

When dysphoria, irritability, and other psychological symptoms predominate, a trial of a psychotropic may be helpful. Antidepressants that inhibit serotonin (5HT) re-uptake, such as fluoxetine and clomipramine, have been found to be effective in double-blind trials.[19-21] Other antidepressants have been tried with good results in open trials. Buspirone, a 5-HT1A partial agonist, also has been shown to be significantly more effective than a placebo for irritability, fatigue, pain and social functioning in 34 patients treated with a mean daily dose of 25 mg 12 days prior to menstruation.[22] Alprazolam, a high potency benzodiazepine, given only during the premenstruum also is effective for mood symptoms and global improvement as compared to placebo.[23,24] Longitudinal intermittent treatment studies with this drug are currently in progress. Other psychotropics that have been tried with less promising results include lithium, fenfluramine, naltrexone, and clonidine.

For severe symptoms that do not respond to less invasive treatments, the next step would be to eliminate the ovarian trigger. This can be done through hormonal treatment or through surgical approaches.

Oral contraceptives can suppress ovulation but hormonal cyclicity remains. This probably accounts for the unpredictable response to such agents. Furthermore, some patients develop side effects to oral contraceptives that are similar to symptoms of PMS.[25]

Danazol is a synthetic androgenic derivative of ethisterone which causes hypothalamic pituitary-gonadotrophin suppression. When given continuously in doses that suppress ovulation and menstruation, the symptoms of PMS are abolished.[26,27] Its usefulness is limited because of its androgenic properties in women of childbearing age.

GNRH agonist analogues act by creating a reversible pseudohypophysectomy and, therefore, a pseudomenopause. Depot goserelin, for instance, has been shown to eradicate premenstrual symptoms.[28] Long-term treatment, however, is not feasible because of risks of osteoporosis and atherosclerotic heart disease. Studies are being conducted in combination with adjuvant conventional hormone replacement therapy.

Surgery may be a last resort for severely affected patients unresponsive to other strategies. Total hysterectomy with bilateral salpingo-oophorectomy can eliminate the symptoms of PMS.[29]

Although the etiology of PMS remains unclear there are strategies a clinician can utilize to alleviate symptoms. The problem is an important one and deserves our continued clinical attention and study.

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Postpartum Preeclampsia Complicated by Acute Pulmonary Edema
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ing therapy with the agent, although reported cases of pulmonary edema up to 72 hours after discontinuation of therapy have been reported. Our patient developed pulmonary edema almost 3 weeks after discontinuation of oral terbutaline, and it is unlikely that tocolytic therapy played a significant role in her presentation.

Peripartum cardiomyopathy is another possible etiology in patients presenting with postpartum pulmonary edema. These patients typically present within 4 weeks antepartum and 5 months postpartum.[6] Alternatively, the contribution of this patient's previous treatment of Hodgkin's disease with chemotherapy and radiation therapy in her presentation is unclear. Both chemotherapeutic agents and mediastinal radiation therapy can cause myocardial toxicity leading to left ventricular dysfunction.[7-8] Our patient, however, had no evidence of left ventricular dilation or systolic dysfunction on echocardiogram to suggest either peripartum cardiomyopathy or cardiomyopathy secondary to chemotherapy or radiation therapy.

In summary, postpartum acute pulmonary edema is a rare but well-described complication of pregnancy. Multiple possible etiologies including peripartum cardiomyopathy, pulmonary edema associated with tocolytic therapy, and pulmonary edema secondary to preeclampsia-eclampsia need to be considered in these patients. In previous reports of patients with pulmonary edema associated with preeclampsia, all patients had antepartum evidence of preeclampsia. In this case report, we describe a case of early postpartum pulmonary edema in a patient with postpartum preeclampsia following a relatively normal gestation and delivery.

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Home-Based Family Support Services: Part of the Comprehensive National Plan to Improve the Overall Health and Safety of Children

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Classified Notices

To place a classified notice:
HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Wanted

MD/DO wanted to join multi-disciplinary personal injury practice. Interests in rehabilitation or internal medicine. Terms negotiable. Contact Dr Carl Gallegos at (808) 523-0030.

Position for NYC–trained internist. ER experience, ATLS/ACLS, local license and insurance. Flexible hrs. NY, Hawaii references. (808) 949-6553.

Medical Director, BE/BC FP with MPH or administrative experience preferred for rural community health center. Salary commensurate with experience. Call Kawahine at 259-7948 or fax 259-6449.

Wanted! Primary care physician for fully equipped medical office in central Honolulu. Convenient location. Established practice. Flexible lease or long-term arrangement. Call 537-7494 or 373-1824.

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Physician office space available in large medical group in Manoa with common clerical support. Available immediately. Call Lillian Evanson-Ziegler RN at 988-7000.

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News and Notes Henry Yokoyama MD

Life in These Parts

Of license plates and men.—Charcoal gray Honda sports model with the intriguing license plate: "2 ROTTN" (Wonder if the youthful driver was abused as a child?—HY)

Retiree news.—Eight years ago, our friendly urologist **Bill Davis** and spouse Rosalie started their own volunteer urological services in Micronesia spending 12 days a year. Since Bill's retirement, they have expanded their volunteer services to 4 or 5 months a year in 2 or 3 visits, covering such remote islands as Belau, Kosrae, Phonpei, Chuuka and Yap. In May, Bill presented a paper on his experiences in Micronesia at the Yonage YMCA College in Tottori, Japan. Starting in April 1995, Bill has been asked to give a series of lectures on rehabilitative urology at the YMCA College.

Quotables.—"Someone asked me what will kill her." (An elderly woman was weathering her two primary cancers, viz esophageal and lung, and other comorbid diseases.) "I tell my patients that if I knew, I wouldn't be a physician. I'd be rich." (Chuckled Dennis Wachi, our oncologist with a sense of humor)

Physician, Heal Thy Symphony

"The symphony scene was ailing so a doctor was summoned," according to *Advertiser* columnist Wayne Harada. **Dennis Meyer** is president of the board of Music Projects Honolulu which is assisting the birth of the new Hawaii Symphony Orchestra. "As a physician, I thought we had a sick patient here. I told the board members that we had to pull all the life supports and get the orchestra functioning again." And it is off to a fine start.

But why our humorist friend Dennis? It seems that Dennis is a former violinist who also played football. "I was the only fiddle-playing concertmaster in high school football." But both careers were stymied by a neck injury, and he turned to medicine at Northwestern University.

Dennis says, "We're going to have to request support from people who've supported serious music in the past. We are also going to have to rely on ticket sales to keep this operation going. We'll need to concentrate on an educational series to involve our young talent here. And we're going to have to do away with esoteric bookings. Besides offering a solid classical diet, Honolulu audiences should also be given a menu that reflects the multicultural makeup of the community. Wouldn't it be nice to perform and hear Chinese music during Chinese New Year or similar fare during Okinawan, Japanese, and Hawaiian celebrations?" (Yeah man!—HY.)

Miscellany

An elderly couple was seriously considering marriage. She: "Dearie, I have to tell you that I have acute angina." He: "Pshaw, that makes up for your flat chest." (As told by our favorite psychiatrist K.Y. Lum)

An attorney specializing in cardiovascular malpractice died at age 40 from a massive MI. When St Peter greeted him at the Pearly Gates, the attorney complained bitterly that he was too young to be there. St Peter studied his computer and solemnly announced, "I re-checked your records and I note that according to your billing records you are at least 85." (Vincent DeQuattro, VP from USC)

Conference Notes

"JNC 5 Evaluation and Treatment of Hypertension in the 90s" by Vincent DeQuattro, visiting UCSF professor at QMC–UH on April 22, 1994.

"A drug is a substance that when injected into a rat produces a scientific paper."

Calcium Channel Blockers

a. Improve coronary blood flow
b. Protect the myocardium
c. Cause LVH regression
d. Improve diastolic function
e. Produce atherosclerosis regression

ACE Inhibitors

a. Cause LVH regression
b. Reduce infarct size
c. Raise angina threshold
d. Improve survival in CHF

**Ca Ch B & ACE in microvascular angina reduce smooth muscle hypertrophy in 6 mos.

Elderly Hypertension

a. Treat with low dose diuretic and check K q 6 weeks.

b. Use of chlorothalidone with atenolol reduces:

1. Strokes by 36%
2. Myocardial infarcts by 27%
3. All cardiovascular events by 32%

Side Effects

CaChB–edema
ACE–cough

Radio Commentary

(Paul Harvey's humor)

Feeling a sudden urgency and with no restroom in sight, the frantic fellow jumped over an enclosure. He quickly knelt and dropped his trousers. But the lioness kept in the enclosure did not approve. The hospital reports that he will survive. (Heard on KHVH radio on July 29)

Police were notified that a woman lay injured in Great Park near Windsor, England. When they arrived at the scene, they found an embarrassed woman with a broken leg. She and her man had been making vigorous love—in a tree. (Heard August 3)

A Paul Simmons returned to his hotel in Emory, Wisconsin late one night. The sign read, "Dog must be carried on elevator." He wondered, "Where am I going to get a dog at this time of night?" (Heard August 5)

Rush Limbaugh's caustic humor (KHVH August 3): In the wake of Asst Treasury Secretary Roger Altman's apology for false testimony in the *Whitewater* hearings, Rush reports a new disease he calls "Acquired Truth Disorder" (Josh Steiner even lies to himself in his own diary or *Lie-ary.*) Everyone in Washington has this disorder and the textbook case is President Clinton. "Everything is true when he says it and means it. Tomorrow he denies it and means it." Rush calls the president *amoral* and *ahonest* (Not merely dishonest).

Condensed Excerpts from *Stitches*

(The Journal of Medical Humor)

Red-Faced Radiologist.—I sent a young man for abdominal ultrasound as part of a urinary tract workup. When I received the report, I showed it to the radiologist who looked at me sheepishly and suggested a "transcription error." The report read: "No abnormality of the upper abdomen is detected. The uterus and ovaries appear normal." (Bruce Young, Calgary)

Urine Trouble.— During my internal medicine rotation in a southern Africa hospital, an old lady was having her fluid balance monitored. After one week in the hospital, I had to present her case to the esteemed professor of medicine who asked her how she was doing.

"Very well, thank you, Professor," she replied. "But tell me, how much longer do I have to go on drinking my own urine."

After much interrogation and many red faces, it was discovered that one of the new student nurses had misunderstood the order for fluid input: "200 ml + previous day's output." (Mark Addison, Jasper, Alta)

Cardioforum: Trends in Cardiovascular Health Care

Sponsored by the University of Wisconsin-Madison Medical School and supported by a Pfizer grant. Held at Ihilani Resort on Sunday, July 31 with moderator **Eugene Wong**. Participating physicians: **George Porter**, professor and chairman, Dept of Medicine Oregon Health Sciences University School of Medicine; **William Parmely**, Professor of Medicine, UCSF; Editor-in-Chief *Journal of the American College of Cardiology*; **Kenneth Grant** MD, JD, associate professor of medicine, Georgetown University, School of Medicine.

Notable Pearls Therefrom

George Porter: Take BP on non-dominant arm.

re red wine: "In moderation does all the good things."

NSAIDs and antihypertensive therapy: Oraflex was best, but it could cause acute renal

failure. Ketoprofen has the least adverse effect on renal blood flow.

Diastolic over 110: Commit to two drugs, eg, ACE with calcium channel blockers with beta blockers.

Dihydropyridines: Cause Na diuresis; edema is vascular effect, not Na.

Diuretics: Use very little—less than 25 mg HCTZ. Larger doses of diuretics have metabolic effect.

ASA prophylaxis: ASA 120 mg daily

William Parmley:

Cardiac workup: Thallium scan has the best sensitivity—false negative are due to bad pictures. Thallium scan and stress ECHO are relatively similar—ECHO is more anatomical.

Nitrate patches: "patch off" interval is trouble.

Refractory vasospastic angina: Dihydropyridine with diltiazem.

CHF: ACE inhibitors are premier therapy.

ASA prophylaxis: Baby aspirin (80 mg) to regular aspirin daily or qod.

GI bleeding reduced with lower ASA dose.

Kenneth Grant:

"The legal game": Good offense beats good defense. Points of equal value may be scored with hard facts as well as soft impressions.

"Warming up the stethoscope": Avoid malpractice by 1) knowing your medicines and 2) demonstrating concern for your patients.

Remember, the lawyer knows less than the physician, esp re adverse effects listed in the PDR. Use counter-questioning tactics, eg, "What do you mean by _____?" And the lawyer will shift gears.

Conference Notes

"Office Evaluation and Management of Hypertensive Patients" by George Porter, Chairman, Dept of Medicine, Oregon Health Sciences.

Why do we treat?—Over a 20-year period, pts spend 2/3 of the natural hx of HTN without any treatment. Systolic pressure gradually rises till age 60. First 50 years, no cardiovascular events with diastolic pressure rise. As systolic pressure rises, cardiovascular events increase; therefore watch systolic pressure more carefully than diastolic pressure. Before age 55, more men have HTN than women; after age 55, more women than men. After age 60, isolated systolic HTN appears.

What do we treat?—Treat diastolic pressure over 90 (ie, 25% of adult population or 10 million Americans with HTN).

Look for reversible causes (mostly in younger population) ie, cardiovascular or peripheral vascular causes.

Diagnosis of HTN

a. Family history

b. ROS: esp CVA (transient), renal and cardiovascular symptoms

c. Wt gain

d. Diet esp Na and alcohol

e. Life events and stresses

f. Medication hx (including over-the-counter drugs)

g. Drug reaction

h. NSAIDs

i. Estrogen

j. Corticosteroids

k. Sympathomimetics

l. Tricyclics

PE: fundoscopic, Ht, Wt, vascular tree, heart, neurologic

Examination:

a. coffee, cigarettes 1/2 hour before exam may raise the BP

b. take pressure on non-dominant arm

c. RNs and doctors have differing BP readings

d. Use disappearance of sound for diastolic pressure

e. Get 3 or 4 consecutive readings on different days. Once you make the diagnosis of HTN, you may be treating the patient the rest of his or her life or at least for 1 year.

BP Phenomena: MD reading usually higher than technician reading.

Osler Effect: Atherosclerosis in the elderly causes transmission of sound (even 20 mm higher systolic pressure)

Lab Workup:

a. UA

b. Blood chemistries

c. FBS, uric acid, Ca, creatinine, electrolytes

d. Fractionated cholesterols and triglycerides

Ambulatory monitoring: Pts with LVH have loss of diurnal variation.

How to treat?

1) Modifiable
 - a. BP
 - b. Cholesterol
 - c. Smoking
 - d. Obesity

2) Target organs
 - a. Cardia
 - b. Cardiovascular
 - c. Peripheral vessels
 - d. Renal
 - e. Retinopathy

• Management of diastolic HTN ages 20 to 70 will not change outcome.

• Management of systolic HTN in elderly (60+) reduces incidence of CVA, CHF, CAD, etc, ie, intervention in elderly systolic HTN reduces events.

Start with one problem at a time, eg, HTN, smoking, wt reduction, cholesterol.

Life-style modification:

a. Lose wt

b. Reduce alcohol intake to less than 1 oz

c. Exercise

d. Reduce Na intake

e. Maintain K, Ca, Mg levels

f. Reduce smoking and drinking

Individualize Anti-HTN Treatment: effectiveness, safety, cost etc.

• High quality or low cost?

• Remember patients spend 2/3 of natural history of HTN without treatment.

Cost-effectiveness of HTN Therapy:

a. Proparonol

b. HTZ

c. Nifedepine

d. Prazosin

e. Captopril

Effectiveness of Drugs:

1) Calcium channel blockers

2) Beta blockers

When to treat?—According to severity, target organ damage, etc etc

Patient Information: Tell pt it is long-term disease, tell risks, give name of drug, BP reading, side effects of drugs, etc.

• Change therapy gradually

• Remember: It is hard to make an asymptomatic patient feel better—but it is easy to make him or her feel worse!

Excerpts from Stitches

(The Medical Humor magazine)

Overheard: Two men discussing a friend's ailment: "I heard Joe's laid up in bed with back pain. The doctor told him it's his *psychotic* nerve." "Yeah, I heard the pain gets so bad it can drive you crazy."

Woman to doctor: "I've been feeling absolutely marvelous since starting those frolic acid tablets."

Female patient to FP: "Can you refer me to a groinacologist?"

Incident 50 years ago (condensed version).—I was a medical officer for an infantry replacement unit of the Canadian Army in England. A soldier who looked no more than 14 years old (but whose age was given as 18) stood in front of my desk. "Please sir, can I see you privately?" I motioned the orderly to close the door and told the young soldier to drop his pants. I noted the typical creamy urethral discharge.

"Don't you know what that is?" I asked the soldier.

"Oh no, sir! It can't be!"

"Why can't it be? Were you out with a girl?"

"Yes sir, but I used a safe."

"Are you sure it didn't break?"

"Oh no, sir! I turned it inside out and used it over again."

To that I had no answer. (A.J.L. Solway)

Miscellany

The funeral parlor director asked, "Have you decided whether to bury or to cremate your mother-in-law?"

The bereaved man replied, "Can we do both? We don't want to take any chances." (As told by our favorite HMA commissioner, Myron Shirasu)

On Being a Doctor

(From *Stitches*)

"The art of medicine consists of amusing the patient while nature cures the disease." Voltaire

"God heals and the doctor takes the fee." *Ben Franklin*

"As long as men are liable to die and are desirous to live, a physician will be made fun of, but he will be well paid." *La Bruyere*

We welcome any jokes or anecdotes from your friends or colleagues for possible publication in the News and Notes section of the Hawaii Medical Journal.—HY

The Weathervane Russell T. Stodd MD

Having no talent is no longer enough.
If a healthy male patient, aged 55, appeared in your office with vision of 20/20 and complained of his difficulty reading, would you recommend corneal surgery? In a recent malpractice case, the defendant eye surgeon performed a hexagonal keratotomy on just such a patient, and the result was unsatisfactory. The patient's vision dropped to 20/30, and he filed a complaint for loss of visual acuity and alleged failure to inform of the risks and alternatives. Moreover, the plaintiff's expert witness testified that the surgeon deviated from the standard of care in performing this high-risk, uncommon procedure. The case was settled for $150,000.

Before opening McBurney, call your attorney!
At the June meeting of the AMA House of Delegates, the members took an overwhelming stand condemning the use of the patent law for surgical and medical procedures. The resolution also encouraged Congress to outlaw this practice, and was directed at the claim for exclusive ownership of a corneal incision for cataract surgery. It was a kinder, gentler, simpler medical world 40 years ago when the first polio vaccine was discovered. When Dr Jonas Salk was asked if he would patent his vaccine, he replied, "Would you patent sunshine?"

What luck for the rulers that men do not think.
Liability reform remains a dream. As in 1992, the Senate killed the tort reform bill with a filibuster. Claiming that today's lawsuit system provides compensation to those who are injured, the bill's opponents (ie, trial lawyers) called themselves pro-consumer. Never mind that the lawyers PACs donated $8 million for the 1992 political campaigns, and individuals and law firms added a whopping $32 million to the campaign coffers (73% to Democrat candidates). For example, Sen Al D'Amato R-NY got more than $500,000 from lawyers and lobbyists, but he ran well behind Sen Barbara Boxer D-Calif, who topped the roster with $700,000. Of course, no one would suggest that our lawmakers would compromise their integrity for mere dollars.

That's where your tax money goes.
The Federal government offered a grant of $50,000 to Milwaukee County, Wisconsin, specifically to use for drug and alcohol treatment for county residents traumatized by the Midwest floods of 1993. The county supervisors turned down the grant, because the floods never even approached Milwaukee! One wonders how often Washington doles out ridiculous grants that are not refused.

Support mental health, or I will kill you.
We should all tremble, not in fear for ourselves, but for our society when doctors are murdered because of their practice of medicine. The criminal in this case believes that his morality is superior, and therefore, he is justified in eliminating those who disagree. Irrespective of one's belief about abortion, the ends do not justify the means as St Jerome wrote in the fourth century.

Those who would treat politics and morality apart will never understand one or the other.
In the sphere of what has the AMA done for you lately, we can all take satisfaction in the *Patient Protection Act*. The AMA has won major congressional battles to prevent HMOs from imposing undue constraints on physicians' freedom to practice good medicine and patients' rights to choose a doctor. The PPA is not an *any willing provider* bill, as the insurance industry claims. Rather, what is clearly driving the support for this bill is the public's (justified) fear that people will be unable to choose their doctors with the insurance industry in control. AMA Executive VP James Todd MD has said the AMA is not against managed care. In the simplest sense that is true, but when the doctor is obliged to bear financial responsibility for the HMO, his medical ethics necessarily are modified. In short, the physician's judgment is no longer dwelling entirely on what is best for the patient, but rather what could be termed minimal care.

Medical industry has created tools beyond our ability to pay.
A major health care cost-driver is biotechnology. The specialty of ophthalmology is a prime example with our lasers (some incredibly expensive), micro-instrumentation, electronic measuring equipment, elaborate instruments, and implantable devices. Recently in California the medical insurer refused autologous bone marrow transplant. The procedure was recommended in hopes of improving a patient with disseminated breast cancer. It is a long-shot measure, at best. Because the insurer refused to pay for the operation, the patient's survivors sued for failure to treat, and won an $89 million award. Now a Massachusetts law requires all the state's insurers and plans to pay for ABMT in advanced breast cancer. With mandating laws and legal threats, can any measure of bio-technology be denied?

There's a lunatic fringe in all reform movements.
So far denied by Congress, the planners for a *single payer* system have gone to the petition device in California. Promoting the positive side only, proponents have gathered over a million signatures to put the measure on the November ballot. In response, a coalition of business groups, taxpayers and providers hope to convince voters that a single payer system is the worng way to go. "A giant step backward," according to Chamber of Commerce President Kirk West. He cited the overwhelming power over health care of a new government bureaucracy, and the huge tax increases required to fund the plan.

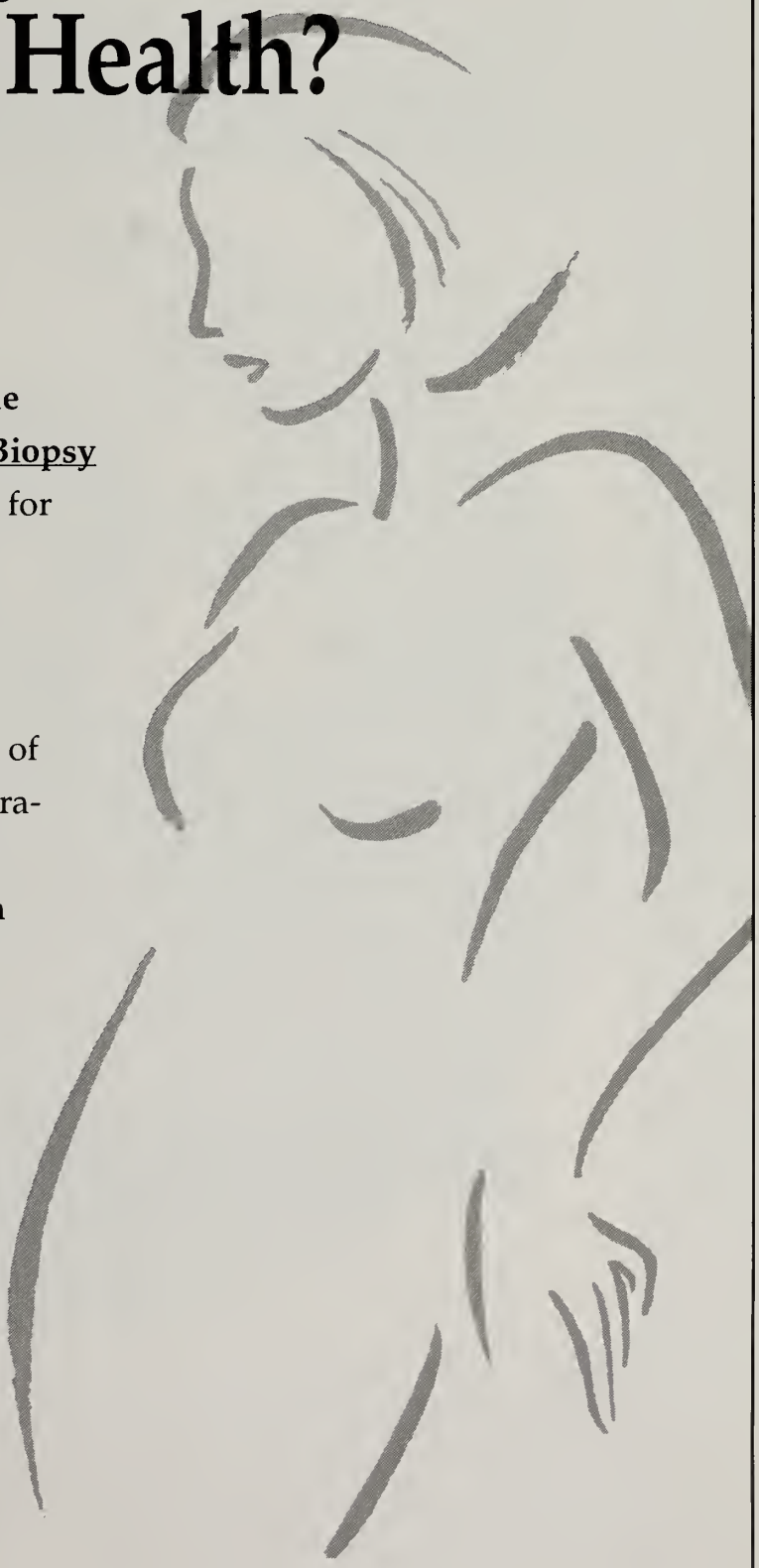
A new necktie attracts the soup of the day.
American consumers paid an average of $18,000 for a new car in 1994, of which about $3,000 was regulatory expense. Fully 16% of the cost of a new car today relates to regulations to provide increased safety and pollution control.

Addenda
▲ The second most frequent cause of malpractice claims is physician medication errors.
▲ To be an idealist implies you aren't going to achieve anything.
▲ No matter what issue politicians are discussing, they are talking about money.

Aloha and keep the faith.
rts
■

Who's Always Been First In Women's Health?

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Kapiolani Women's Center

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Malpractice Hazard:

Medication-Related Injuries

Medication-related claims are the second most common and second most expensive claims against physicians. Nationally, the average payment to patients in these cases is more than $120,000, and rising, according to the Physician Insurers Association of America.

MIEC conducts loss prevention seminars to help physicians and their office staff understand the causes of medication-related injuries and how to prevent them. Here are five of our recommedations for reducing patient injuries and malpractice claims:

1. **Use a medication control record in each patient's chart.**
2. **Take and document a complete medication and allergy history the first time you see a patient and periodically thereafter. Don't forget to ask about over the counter medications.**
3. **Help patients avoid improper medication use; provide them with written drug information.**
4. **Don't allow unlicensed office staff to prescribe drugs or to refill medications without your authorization.**
5. **Write legibly, and use accepted abbreviations and nomenclature.**

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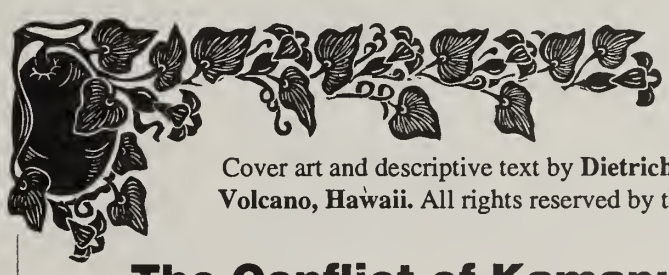
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The Conflict of Kamapua'a

The goddess Hina is the mother of Kamapu'a, a god who can take the shape of a man or a hog. Kamapua'a would assume either guise to suit the moment or deceive his pursuers. He was constantly involved in conflict.

In one adventure Kamapua'a confronts Hina's fisherman to give him some fresh fish. The fisherman refused the bold request several times. Hina also refuses because she does not recognize her own son and thinks him dead.

Kamapua'a is red-eyed with anger at not receiving any fish and begins a revealing chant which identifies him as Hina's son. Hina is stunned at the revelation. She begs forgiveness for not recognizing her son.

But Kamapua'a is in a rage and sits on Hina as she lies prostrate before him. He walks over the others' bodies. Only when Hina finally disrobes and shames herself in nakedness does Kamapua'a forgive them.

Editorial Norman Goldstein MD

Aloha to Samuel D. Allison MD

Sam Allison, past president of the HMA and the *Dean of Hawaii Dermatologists*, is moving back to the Mainland.

When your editor came to Hawaii 31 years ago, there were three "great names" in Hawaii dermatology—not just men known and respected in Hawaii, but on the Mainland and around the world as well. Harry L. Arnold Jr, or "A_2", served as editor of the *Journal* for more than 40 years. Harold "Skin" Johnson came to Hawaii in 1940 and practiced in the Alexander Young Hotel Building. And then there was Sam Allison, the renowned VD authority.

Sam and I attended New York University, Bellevue Hospital: He in 1948; I in 1961. But his name was legendary to me long before I arrived in Hawaii. Sam Allison directed the Hawaii Territory Health Department's Bureau of Venereal Diseases from 1942 to 1945—very busy years for a dermatologist/syphilologist. At the onset of World War II, there were at least 20 houses of prostitution on Oahu, employing at least 250 women. With the tremendous influx of men, the prostitutes worked shorter hours and more rapidly(!) until they had reduced their average time of contact with their customers significantly.[1]

Sam's classic VD article, *Venereal Disease in Wartime Hawaii*, also included photos of brothels in Honolulu and the ubiquitous Board of Health prophylaxis placard with a handwritten special notice, "Time Limit: 5 minutes. No Money Back."

Another of Sam's major contributions was *Social Protection in Hawaii—How the City of Honolulu Closed its Red-Light District.* (Sam, we can still use your help!)[2] Sam also wrote a *VD Manual for Teachers* and *The Story of VD* for intermediate and high schools in the territory.

After more than 50 years of living in Hawaii and more than 50 publications and numerous board memberships, including editorial board of the *Hawaii Medical Journal*, Sam will be moving soon.

Cecil and Sam recently celebrated their 57th wedding anniversary. They will be living on the East Coast to be closer to their daughter Kathryn and her family.

Sam, we are saddened to say *aloha* to you and Cecil. You have had a tremendous influence in dermatology and all of medicine in Hawaii. We could use your help in eradicating the AIDS problem as you did with syphilis and gonorrhea.

On behalf of your colleagues in Hawaii, *mahalo nui loa.*

Norman Goldstein, Editor

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Editorials

A Common Sense Prescription for Health Care

There are a number of myths about health care in the United States. The biggest is that we are in a "health care crisis." Yes, we need to improve the system, but we should avoid the massive controls suggested by the Clinton administration.

We have the greatest health care system in the world! The world envies us; people come from afar to receive care in our facilities. There is no health care crisis!

There are approximately 40 million people without health insurance (about 15% of the population). Of the most vulnerable:

- The aged are covered by Medicare.
- The poor are covered by city, state, and federally funded programs and not-for-profit health care organizations.

Must uninsured adults are between jobs or working at low-wage jobs. Half are under 30. Three-quarters are covered again within a year. Better ways are needed to help these individuals without overhauling the entire system. Aiding individuals would cost less money than changing a system that works for about 85% of the population.

However, the Clintons and some in Congress seem intent on changing the entire health care distribution system. They are heading in a direction that will dramatically increase government control and costs while reducing an individual's involvement in personal health care decisions. Hopefully, an informed public can help these leaders have a change of heart.

There are three variables in medical care. It should be:

- High quality, high-tech.
- Rapidly and easily accessible.
- Economical.

Unfortunately, we can have only two out of three.

In the United States, we focus on the first two variables. We have the best medical care in the world, it uses technology extensively, and it is available almost immediately. Health care is not rationed or delayed as is the case in the United Kingdom or Canada.

The cost of medical care in the U.S. is high, but we pretty much get what we pay for. More than that, any person who has had a lifesaving experience with our medical care system will tell you that the benefits are incalculable.

The good news is that we can improve our medical care system by doing a few simple things that will decrease government involvement and put individuals back in charge of their health care decisions:

- **Get the lawyers out of health care.**

Malpractice insurance is a pre-payment of lawyers' fees, which can run up to half of a malpractice award. It costs every person in the U.S. hundreds of dollars annually.

In addition, too many unnecessary x-rays, lab tests, and procedures are ordered to position the physician, clinic, or hospital in the event of a malpractice suit. The price of so-called "defensive medicine" is astronomical.

This could be reduced if every state developed a schedule of payments to settle malpractice claims. Expert arbitrators would review claims. If there were charges of malpractice, the arbitrators, not lawyers, would order a financial settlement based on the schedule.

• Make all health care equally tax deductible.

Currently, part of health care is tax deductible by individuals and employees.

But some people have to buy their own health insurance policies or pay health care bills using after-tax dollars.

Let's make health care equally tax deductible and give everyone a tax deduction for what they spend on health insurance and health care.

• Let individuals make health care cost decisions.

If the cost of health care and health insurance were tax deductible and self-monitored, individuals suddenly would be intimately involved in their health care cost decisions. They would seek physicians, hospitals, and insurance policies with the best monetary value. Before using health care services, patients would ask about the costs and alternatives. Millions of individuals would police the health care market instead of government bureaucrats, insurers, and employers.

• Make it possible to buy customized, no-frills, affordable insurance.

Legislators in many states have pushed the price of individual and small-group insurance policies out of the reach of low and middle-income workers by requiring carriers to include benefits such as treatment for drug abuse and alcoholism, and the services of psychologists, chiropractors, acupuncturists, and naturopaths. The result is that healthy young persons or persons between jobs who need health care coverage only for catastrophic illness, find the cost of health care insurance outrageous, and are being asked to subsidize care neither wanted nor needed.

We need to free insurance companies so that they can offer no-frills, basic, affordable insurance to those who want only that kind of protection.

• Make it possible for insurance carriers to charge fair prices for health care.

Many states dictate that in pricing health care insurance carriers adopt "community pricing" or "one-price-for-all." That means that young, healthy people with good lifestyles are being forced to subsidize health care for those with unhealthy habits such as alcoholism, drug abuse, etc.

We should free the insurance companies from these restrictions and allow them to price insurance based on age and lifestyle categories, much like life and auto insurance policies are priced.

Recognizing that this would increase health care costs for some, we also should have a system of subsidies so that all can afford basic medical insurance.

In summary, we have an excellent health care system. It is not in crisis. The institution of medical reform, equal tax deductibility, individual responsibility for the payment of medical costs, no-frills insurance, and fair-priced insurance would reduce the costs of medical care without affecting quality and access. That also would allow us to focus on those who need financial assistance so that all can be included in the world's finest medical care network.

Richard R. Kelley MD

Richard Kelley MD is well known to Hawaii's medical community and the visitor industry. Rich attended Punahou School, Stanford and Harvard. He served as a pathologist at Queen's and later Kapiolani Hospitals. In the 1970s ,the call of the family hotel chain beckoned Rich to retire from medicine and take over Outrigger Hotels Hawaii.

Rich Kelley wears many, many hats, but still he is very concerned with medicine in Hawaii. In this guest editorial, Dr Kelley presents his views forthrightly and clearly—the views of a physician and a businessman—a great combination. Mahalo, Rich, for your many contributions to education, medicine, and tourism in Hawaii.—ED.

Letter to the Editor

The *Journal* welcomes letters in good taste on any topic. All letters must be signed with the writer's correct signature and include the address and telephone number for our verification. Letters should be on a single subject and no longer than 200 words. Letters of any length may be trimmed.

Send to: Letters to the Editor, Hawaii Medical Journal, 1360 S. Beretania Street, Second Floor, Honolulu, HI 96814.

I was pleased to read Irwin Schatz's article, "On the Quest for the Humane Physician" (*Hawaii Med J.* 1994;53:196-199) and would have liked to have heard the original unedited presentation. Now 26 years out of medical school and with little ensuing contact with academia, I am a bit dated, but it doesn't sound like much has changed since my departure.

I would like to suggest that the primary origin and solution to the problem lies not somewhere in society but in medical school itself. Dr Schatz suggested as much, but failed to allow the buck to stop there. Interestingly, the medical school effects he does mention are primarily those of policies, programs, and technology rather than persons.

Medical schools are responsible for selecting their own students, but, unless a lot has changed since the sixties, they are selected for qualities allowing them to be successful medical students rather than good physicians. Furthermore, medical school professors are academicians and their first priorities rarely are patient care. Often they consider academic medicine to be a higher calling than practice. I recall reading a report a few years ago that ranked the nation's top medical schools giving Harvard the prize. The primary criterion? Harvard had the most medical school professors among its graduates.

Medical schools also are responsible for selecting their own faculty, and it is unlikely that humaneness is one of the criteria. Medical students and house staff are incredibly impressionable and eager to model themselves after mentors whom they consider attractive. Many professors are excellent, humane physicians, but many are not and it takes fewer to make it bad than it does to make it good. If the primary behavioral values being demonstrated do not include humaneness as superordinate, behaving humanely will be an individual accident. It was refreshing to have Dr Schatz debunk the absurd contention that

one cannot be a compassionate and scientifically minded physician simultaneously. One of the country's leading biologically oriented psychiatric residency programs states that, "We want our graduates to think like neuroscientists and behave like Marcus Welby."

Changing all this would take some work, but wouldn't require changing society at large.

Jon Betwee MD

Medical School Hotline

Curtis Takemoto-Gentile MD
Chair, Department of Family Practice and Community Health

Family Practice in Hawaii

The residency program in family practice and community health began on July 1, 1994 at the John A. Burns School of Medicine.

The program director is Curtis Takemoto-Gentile MD and the primary training hospital for the residency is Wahiawa General Hospital.

In September 1993, the Family Practice Residency Program was approved and accredited by the Family Practice Residency Review Committee (RRC). By October of that year, medical schools and Family Practice Program directors throughout the United States were notified of the availability of positions for 12 residents: Six first-year and six second-year. On July 1, 1994, 12 residents began their training.

The training of family physicians is comprehensive in that it covers the general scope of health care from "womb to tomb." The first year of training includes two months with a general surgeon, a month each in obstetrics, gynecology, emergency medicine, medical ICU, pediatric ward medicine, intermediate newborn nursery care, and three months on in-patient care. The second year will include rotations in cardiology, obstetrics, dermatology, urology, orthopedics, newborn nursery, outpatient pediatrics, three months of inpatient care and two months of rural medicine in Hilo. The final year will have rotations in pediatric emergency medicine at Kapiolani Medical Center for Women and Children, sports medicine, newborn nursery and outpatient pediatrics, otorhinolaryngology (ENT), ophthalmology, geriatrics, two months of inpatient and two months of rural medicine.

Throughout the training, the curriculum focuses on behavioral aspects of health care related to the family systems, family dynamics, parenting skills and their stresses. The doctor-patient relationship and communication skills are integrated throughout the training with special attention paid to cross-cultural values found in the Hawaii community; ie, Hawaiian, Chinese, Japanese, Samoan, Filipino, Caucasian, and Korean.

Currently, the Residency Program has been successful in obtaining three federal grants to further enhance and develop the newly formed Department of Family Practice and Community Health. The grants are entitled, "The Establishment of a Family Medicine Department," "The Establishment of a Pre-doctoral Family Practice Curriculum" and "The Establishment of a Family Practice Residency Program."

The department is staffed by: Kay Bauman MD, Carole Tsou MD, Phil Bohnert MD, David Brown MD, Allan Chun DO, MPH, Gordan Greene PhD, Laurie Hopman MD, Neal Palafox MD, MPH, Linda Tom MD and Scott Choe.

All faculty are involved with teaching medical students and residents as well as providing community service through the Physician Center at Mililani and at Wahiawa General Hospital. In addition, faculty members have initiated research activities that include a current study in the Marshall Islands by Dr Neal Palafox on ciguatera poisoning and the effect of mannitol as a treatment.

Historical Notes

John A. Breinich
Hawaii Medical Library

The Board of Health has a long history in Hawaii. In 1836, the first public health measure was taken to prevent pestilent disease. The document read in part that they should try "...to ascertain whether there has been any case of smallpox or other pestilent disease aboard vessels approaching the harbor." If disease was present, the ship's master was directed to hoist a yellow flag at the main and immediately give the information to the authorities.

In 1839 King Kamehameha III appointed a "Board of Health" to inspect incoming ships, "...smallpox having been clearly ascertained to prevail on a few ships already." In 1840 R.C. Wyllie, Minister of Foreign Relations, and others were urging the adoption of comprehensive health measures and the formation of an all-island Board of Health. On December 13, 1850 King Kamehameha III responded to these urgings by establishing an island–wide Board of Health. The new Board of Health was directed "to provide for the preservation and cure of contagious, epidemic, and other diseases" and to enforce sanitary measures. This new Board of Health was established just two years after the formation of the General Board in London, England, and five years before the formation of the first State Board on the Mainland in Louisiana in 1855. Dr T.C.B. Rooke, who was then port physician, was named as the first president of the Board of Health.

By the early 1900s, the position of president of the Board of Health had been held by nonphysicians and at the July 11, 1908 meeting of the Hawaii Territorial Medical Society the following motion was passed: "That the Governor be communicated with that it is the sense of the Medical Society that a medical man be President of the Board of Health." Even today, the question of who shall head the Department of Health has a familiar ring to



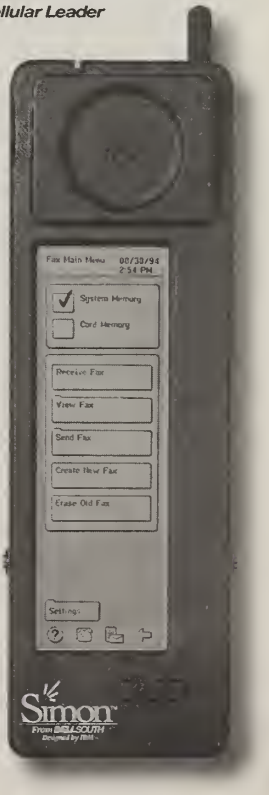
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Military Medicine

Arthur C. Johnson III MD
Clinic Director, HIV Program
Tripler Army Medical Center

HIV, AIDS, and the Military

Soon after the HIV epidemic became apparent, the Department of Defense (DOD) undertook an intensive program to identify infected military personnel and to protect its blood supply. In 1985, the Department of Defense and the Red Cross both initiated screening of all donated blood for HIV antibodies and for evidence of infection. That same year, routine screening for HIV antibodies was initiated among all active duty personnel. By 1986, all applicants to the military and all active duty personnel were tested for HIV; subsequently, Reserve and National Guard personnel also were included in routine surveillance testing.

In August 1986, Congress mandated the military to initiate HIV research under the direction of the U.S. Army Medical Research and Development Command, the lead agency for infectious disease research in the DOD. In 1988 this research infrastructure was augmented when a grant was awarded to the Henry M. Jackson Foundation for the Advancement of Military Medicine to work on AIDS/HIV. To date, 60 research protocols on AIDS/HIV are in various stages of implementation. The military program's principal categories of HIV/AIDS research called *mission areas* are diagnostics, epidemiology and natural history, immunotherapy and vaccines, chemotherapy, behavioral medicine, viral biology, animal models, and opportunistic infections. The DOD directly funds all of these mission areas.

Balancing the implementation of HIV/AID research programs was the development of clinical programs to provide care for those found to be HIV infected by the routine screening programs. Active duty HIV-infected soldiers remain on active duty and continue normal career progression until the development of symptomatic HIV disease. At that time, they receive a medical retirement.

To provide optimum care for HIV-infected soldiers, their dependents and retirees, the Tripler Army Medical Center established an HIV clinic in 1986. Realizing the multifaceted nature of HIV disease a multidisciplinary team approach is used to care for infected patients and to provide mandated yearly education on HIV. The team consists of a general internist, a psychiatrist, a nurse practitioner, two social workers, and two community health nurses. Subspecialty consultation is readily accessible. This team provides primary and consultative care in both inpatient and outpatient settings for those with HIV infection. Four hours of mandatory HIV education is provided annually to all active duty soldiers and in-service education to health care providers at Tripler and its satellite clinics, and a needle-stick evaluation program are other services provided by this team. Patients seen in the HIV clinic are offered the opportunity to participate in ongoing research efforts, especially clinical drug trials both in the aforementioned military-sponsored research programs and through pharmaceutical industry company trials and in conjunction with the University of Hawaii AIDS Clinical Trial Unit.

The TAMC HIV clinic has a cooperative agreement with the Veterans Administration to provide care for their HIV beneficiaries, and we also serve as the tertiary referral center for HIV-infected Trust Territory of the Pacific beneficiaries. Medical education is one of the primary missions of TAMC; the HIV clinic and consultative service plays a major role in the education and training of housestaff, medical students, and pharmacy students.

The goal of the Tripler HIV program is to prevent new infections, disease progression, and death. We seek to complement the work of other federal agencies, private industry, and academia, and to enhance military medicine.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. government.

HMA Alliance

Susan L. Foo, President

This year proved to be the HMA Alliance's most successful year in its 45-year history of community service and support for the HMA. I am proud to announce the following accolades were received:

- The HMAA received the highest honor from the AMA-Education and Research Foundation and was recognized for *The Greatest Percentage Increase in AMA-ERF Contributions* and for *The Greatest Per Capita AMA-ERF Contributions*. The major contributor to this award-winning fund-raising effort was "The Greatest Show in Hawaii" benefit, which raised and pledged more than $100,000 for the John A. Burns School of Medicine. Also the Auxiliary to the Maui County Medical Society hosted a tennis tournament and lunch to benefit AMA-ERF and earned $1,000.
- The AMAA also recognized the HMAA at a membership reception in Chicago for our significant increase in national and local membership.
- Mayor Frank Fasi proclaimed April 8 to be "Alliance Day" and presented a plaque and congratulations to our officers.
- Governor Waihee also sent a commendation letter to the HMAA for our outstanding service to the community.
- Waianae Coast Comprehensive Health Clinic presented a certificate of commendation and appreciation to the HMAA for the great success of the "Hawaiian Monarchy Fashion Show."

The following are the accomplishments of the HMAA during 1994:

Legislative Areas

- For Doctors' Day on March 30, we honored our physicians with a two-page color tribute in the *Honolulu Advertiser* paid for by the HMA Alliance, the Auxiliary to the HCMS, and solicita-

tions from suppportive partners in good health. Big Island physicians also were honored by a celebration party and with a Happy Doctor's Day poster in the lobby of Hilo Hospital. First-aid kits were created by the Honolulu County and distributed to legislators on Doctors' Day where we were present as legislators honored HMA leaders. We received many appreciative letters from the legislators for these first-aid kits.

• Legislative updates were communicated to our members via our meetings, newsletters, and teleconferencing.

• Participated in legislative rallies and teleconferencing legislators in support of HMA's goals for Healthy Hawaii.

Health Projects

• In support of the AMA Alliance campaigns against family violence, drug abuse, preventing child abuse and neglect, and assisting in nurturing families, the Auxiliary to the Honolulu County Medical Society donated $1,000 to Oahu's DARE "Just Say No to Drugs Program."

• Assisted with the MADD Red Ribbon Campaign.

• Supported discharge pamphlets for new mothers at Hilo Hospital.

• Assisted the Blood Bank in Hilo.

• Helped the Hilo Children's Advocacy Group during Child Abuse Month.

• Collected and distributed clothing and usable toys for the Hawaii Family Stress Center in Honolulu.

• Coordinated Kauai's Health Fair and mass immunization clinic for *keikis*.

• Participated with the Hilo American Cancer Society Food demonstration in "Food Fight Against Cancer" and "Moonlight Madness Walk/Run."

• Distributed "Do not Drink and Drive" messages inside tuxedo pockets for Hilo senior graduates.

• AHCMS generously donated $1,000 to the Hawaii Heart Association Research Scholarship Fund.

• Will help sponsor the Women's Health Seminar in Oahu.

Enrichment/Personal Growth Sessions

• Newsletter production and distribution (includes editing, writing, and communication skills).

• Fund-raising seminars (learning such organizational skills as group dynamics,



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–Keith Katano,
Group Administrator,
Medical Arts Clinic

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time management, procurement procedures, and creative thinking in program, invitation, and room decor development).

• Confluence and Annual Session in Chicago attended by our state and county leaders.

• Hands-on craft workshops (*haku* lei making, displays, etc.).

• Aerobics and dance classes for good health and well-being.

It has been an honor and a privilege to serve as the HMAA president. I would like to sincerely thank my wonderful officers and board of directors for their excellent commitment and dedicated hard work in helping to make this a truly banner year for the HMAA. Also, my deepest appreciation to the HMA and its diligent staff for their support during the year.

My best wishes to Lillian Nishi as she begins her term of office. We are indeed fortunate to have such an intelligent, caring and talented president leading the HMA Alliance in 1995.

HMA President's Message

Andrew Don MD

National health care reforms did not survive this year, however, the prospect of change in the health care delivery system is likely to continue. Many physicians are aligning themselves with managed care organizations, and despite uncertainties, this trend is becoming the dominant model for the delivery of health care. As health care costs continue to increase, big businesses and health insurers are looking to the providers in these networks to control costs. Physicians, generally unorganized, are unable to compete in this environment and are losing influence and control of health care. Physicians are having their practice of medicine dictated by large fiscal concerns rather than by patient needs.

A simplistic way to define managed care is a system used by third party payers to control access to and payment for health care services—limiting providers, shifting the financial risks and using case managers to control access. On the other hand, managed care may be defined as a comprehensive approach to the health care delivery system to include education, planning, and monitoring through peer review, utilization review, and practice parameters to bring about quality care in a cost-effective manner. This approach seems more palatable and is endorsed by successful HMOs such as Kaiser Permanente.

What is at stake, one might ask?

- For patients—their access and quality medical care are at stake.
- For physicians—control over medical decision making and perhaps livelihood are at stake.
- For insurers and businesses—their profit margins are at stake.
- For government bureaucrats—their careers are at stake.

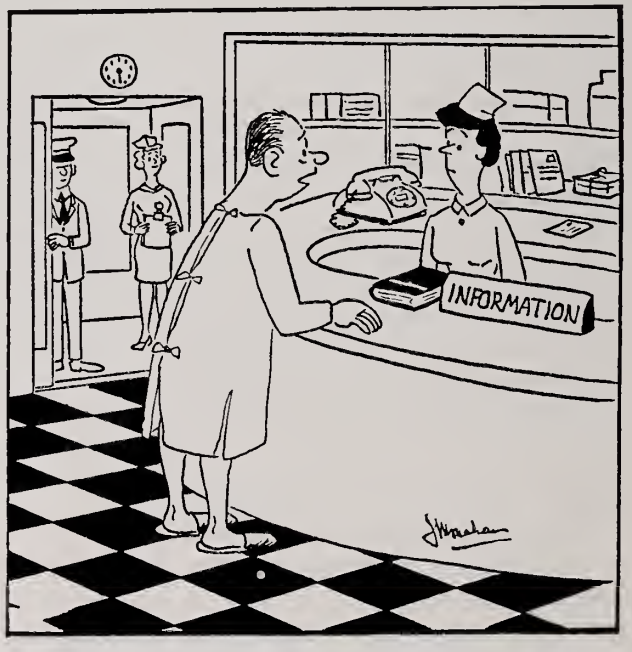
The Hawaii Medical Association is a professional organization formed to "promote the art and science of medicine and the betterment of the public health." The physician/patient relationship is inherent in the concept of professionalism and has guided physicians to serve patients in the continuously changing environment. Health system reforms are causing confrontations between technology and economics that will generate more and more ethical dilemmas.

The HMA leadership role can provide the basis for quality assurance to be conducted with some uniformity and consistency within the State. Decision making in medicine, ie, practice parameters, utilization reviews, is information driven and manging the information process properly will be one critical function in our organization.

A national health system reform did not pass, however, more local health system reforms will take place, and this is where the physician work force and leadership can shape medicine's future. Health care is best delivered by physicians and not corporations. The key is to control and to take charge of the market-driven environment to regain the control of the care of our patients.

Creating a strong physician organization is essential for developing successful managed care. Under HMA guidance, individual physicians can participate in a managed care plan while maintaining an independent practice. It will foster physician consenus building and decision making, and allow physicians to present a united front. It will offer physician fairness in managed care, allowing practicing physicians to develop policies related to credentialing, performance, and utilization review. It will incorporate the AMA Patient Protection Act, putting the patient first.

As medical care and advanced medical technology are confronted by cost and economics, thus creating ethical dilemmas, HMA will have a strong role to play. An HMA steering committee has been involved in pursuing a statewide IPA. Such an organization supported by HMA will enable practicing physicians to participate in a managed care environment—giving physicians autonomy to care for their patients and preserving the physician/patient relationship.



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For more information about how HPAS can help your practice, contact April Wolfe, Johnnie Tai, or Bill Shanks at **696-1558**.

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Colonic Sphincters Revisited: Simulators of Organic Disease

Joseph A. Gagliardi MD*, Martin G. Radvany MD*, Thomas E. Kilkenny MD*, Robert D. Russo Jr, MD**

Barium enema examinations establish the presence of neoplastic or inflammatory disease in the colon. Areas of narrowing commonly encountered appear to represent organic disease. These areas are in expected locations throughout the colon and have been described.[1-3] *Not much attention had been given to these areas in recent literature, however, which has led to unnecessary colonoscopies and even surgeries.*

The sphincters of Rossi, Balli, and Payr-Strauss are involved in nerve reflexes; the sphincters of Hirsch, Moultier, and Busi are a thickening of longitudinal and circular muscle fibers. Cannon's sphincter is an overlap of the superior and inferior mesenteric nerve plexuses. When an area of narrowing is encountered where a known sphincter is located, insufflation of more air, changing patient position, administering 2 mg of glucagon intramuscularly or 0.5 mg to 1 mg intravenously will aid in the distinction between a sphincter and organic disease.

Introduction

Barium enema examination of the colon is commonly performed throughout the world.

Recently, at both Tripler Army Medical Center and St Vincent's Medical Center, the authors encountered areas of persistent colonic narrowing in several patients which at first appeared to represent organic disease. As the procedure progressed many of these areas changed in appearance and demonstrated a normal mucosal pattern. These abnormalities are attributed to spasm, and when areas of narrowing occur in the expected locations that do not change, glucagon is administered intramuscularly or intravenously to relieve these areas of abnormal narrowing.

We became interested in these areas because many standard textbooks do not cover these transient abnormalities.[4-6] A literature search provided many articles detailing the location of various colonic sphincters (Fig 1); however, all were 20 or more years old.[1-3] The purpose of this paper is to retrospectively and prospectively review 500 barium-enema examinations to determine the frequency of the sphincters and to illustrate their varied appearance. Increased awareness of these sphincters will decrease errors in the diagnosis of organic colon diseases and prevent unnecessary intervention.

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Materials and Methods

Two days before the exam, all patients were placed on a clear liquid diet and given four 5 mg bisacodyl tablets to be taken orally, 2 a day at noon.

At 4 pm on the day before the exam, 296 ml of citrate of magnesium was ingested. The patients were to ingest nothing by mouth on the day of the test and at 6 am the patients were given a 10 mg bisacodyl suppository.

Double-contrast barium enema examinations were performed on all patients. Barium sulfate suspension was instilled to the mid-transverse colon and the barium bag was placed on the floor to drain the excess barium from the rectum and sigmoid colon. The patient was placed in the right lateral decubitus position to facilitate barium flow to the hepatic flexure. Once barium reached the hepatic flexure the patient was placed in the supine position and the table was tilted with the head up so barium could flow into the cecum. The barium bag was then clamped. At this time air insufflation was started in order to gain adequate colonic distention. Intermittent fluoroscopic monitoring was performed throughout all exams.

When adequate distention was achieved, routine fluoroscopic images of all quadrants were obtained with additional images if abnormalities were identified.

If a persistent narrowing was observed, and there were no

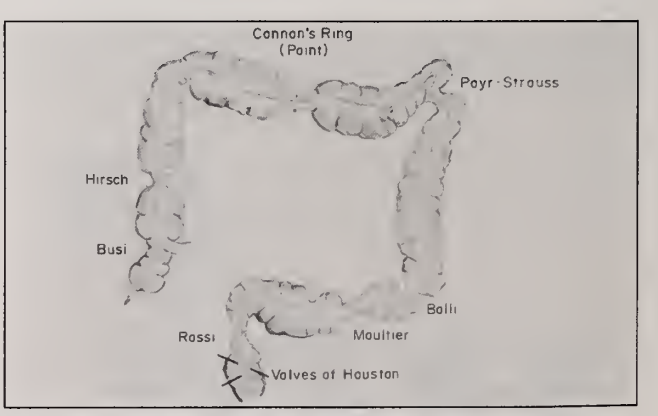


Fig 1.—Diagram of the location of expected sphincters.



Fig 2.—(Left)The cecum has an abnormal coned appearance with barium present in the terminal ileum. With insufflation of more air, the cecum returned to its normal configuration.

Fig 3.—(Below) A spot radiograph of the cecum shows a somewhat focal area of narrowing present adjacent and superior to the ileocecal valve. The edges taper smoothly toward this narrowed region; the mucosa does not appear ulcerated.





Fig 4.—Radiograph of the abdomen demonstrates a narrowed right colon with thickened mucosa similar to thumbprinting (arrow). Adequate distention proximal to this abnormality. In addition, multiple distal small bowel loops are filled with barium and appear to be normal. This abnormality resolved after glucagon administration.

contraindications, glucagon was administered 0.5 to 1 mg intravenously or 2 mg intramuscularly. If the narrowing did not resolve after additional insufflation of air and a change of position, the dose was repeated once.

Standard overhead radiographs of the abdomen were obtained in the supine, prone, right and left lateral decubitus views and lateral view of the rectum in the prone position with the catheter removed.

Barium enema examinations were reviewed by the authors as a group and consensus was reached in all cases as to the diagnosis of the presence or absence of a colonic sphincter.

Results

Retrospectively, 350 cases were reviewed and prospectively 150 barium enema examinations were reviewed. In these exams 83 (16.6%) patients had sphincters. Multiple sphincters were present in 15 (3%) patients.

Cannon's sphincter was identified most frequently, as seen in 45 (9%) patients, followed by Payr-Strauss in 26 (5%) patients. The sphincters of Hirsch and Busi were present in almost equal numbers, 10 (2%) and 9 (1.8%) respectively. Moultier's sphincter occurred in 6 patients (1.2%). Rossi's sphincter was seen in 4 (0.8%) and only 1 (0.2%) patient demonstrated the sphincter of Balli.

Discussion

The colonic sphincters (Fig 1) can be grouped according to similarities in structure or function. Muscular sphincters are true structural entities that result from an increased thickness in the longitudinal and circular muscle fibers. Examples of these are Busi, Hirsch, and Moultier sphincters.[1]

The functional sphincters of Payr-Strauss and Rossi demonstrate no changes in muscular arrangement or thickness and are caused by nerve reflexes.[1] With regard to the sphincter of Balli, debate exists as to whether a true histological difference exists in the muscular layer in the sphincter of Balli or whether this sphincter should be grouped with those that act solely in response to neural stimuli.[1,2]

Cannon's point, also known as the area of Cannon-Boehm, results from an overlap of neural plexi between the junction of the primitive midgut and hindgut which signals the change from an absorptive colon to a storage colon.[2]

The sphincter of Varolio is reported to be found at the apex of the ileocecal valve and represents a unification of circular muscular fibers, which in conjunction with the ileocecal valve, can act as a sphincter.[2] Other review articles do not mention this entity, and we were unable to diagnose this sphincter.[1,6-7]

The sphincter of Busi is seen 9 times in our review and commonly occurs as a smooth area adjacent to the ileocecal valve (Fig 2).

The sphincter of Hirsch occurred in 10 studies and has a variable appearance. This sphincter at times appears as a focal area of narrowing adjacent and superior to the ileocecal valve (Fig 3); at other times it involves long segments of the right colon to produce a coned cecum (Fig 4).

The patient in Fig 4 was evaluated for pain in the left lower quadrant and possible diverticulitis. Marked muscosal thickening and spasm were present in the right colon (arrow) even though the small bowel readily filled with barium and appeared normal. The patient stated that even during the exam there was no abnormal pain to the right side. Glucagon was administered intravenously in a 0.5 mg dosage that brought about prompt resolution of the abnormal-appearing right colon. This broad area with a variable appearance is consistent with the sphincter of Hirsch. In his original description, Hirsch stated this sphincter represents a vestigial strip of muscular fibers—the retinacular bands—that form the frenulae of the valves.[7] In this same article, Hirsch calls this area the cecocolic sphincteric tract, alluding to its lack of focality. He notes that both lower animals and humans have this sphincter, postulating it's importance in the retention of cecal contents for complex digestive changes to occur.

Cannon's point, first described in 1902 following animal experiments and later confirmed by Boehm, was present in 45 exams and is our most commonly diagnosed sphincter. This is a sphincter without any evidence of muscular thickening or abnormal accumulation of ganglion cells.[8] This sphincter represents the junction of the midgut and hindgut, a watershed zone of different innervations and vascular supply. Its appearance also is quite variable, and it can appear as a focal area of narrowing (Fig 5) or can involve longer regions of the transverse colon (Fig 6). In these cases, the narrowed regions have smooth, tapered edges without evidence of mucosal ulceration, and all remitted with change of position or insufflation of more air. The mucosa in Fig 6 has a feathery or wrinkled appearance.

To rule out an underlying colonic lesion, an elderly patient was evaluated who had a history of blood in the stool. A focal area of narrowing in the mid-transverse colon was identified that did not change throughout the exam even though insufflation of more air and the recommended change in patient position was performed (Fig 7). Glucagon was not administered, and the patient was discharged from the department with the preliminary diagnosis of a colonic neoplasm. As this area of narrowing is in the expected location for Cannon's point and no definite mucosal ulceration was present, the patient was reexamined the next morning and did not demonstrate evidence of the previously noted abnormality (Fig 8).

The Payr-Strauss sphincter in the splenic flexure was found in 26 patients and most commonly appeared as a long segmental narrowing or change in caliber extending distally to the sigmoid colon region (Fig 9). A focal area of spasm less commonly identified was found (Fig 10). This abnormal area is more commonly present when the bowel is underfilled with air.

The etiology of the Payr-Strauss sphincter, in which no histologic differences are present, results from the peristaltic rush that originates at this level during stimulation of the defecation reflex.[4,5]

The sphincter of Balli, present at the junction of the descending colon and sigmoid colon, was found in 1 patient (Fig 11). This patient's examination demonstrated a focal area of narrowing (arrow). As noted earlier, debate exists as to whether histologic abnormality exists to account for this abnormality.[4-5]



Fig 5.—(Right) Right lateral decubitus radiograph demonstrates a smoothly tapered narrowing in the transverse colon (arrow).

Fig 6.—(Below) The normal haustral folds are absent in the transverse colon and the mucosa is distorted. There is no significant narrowing in this region.





Fig 7.—Spot compression radiograph of the midtransverse colon demonstrates a focal area of narrowing with overhanging edges simulating an *apple core* lesion typical of neoplastic disease.

The rarity of this lesion however requires more detailed reviews to document its roentgenographic appearance.

The sphincter of Moultier is a true sphincter resulting from thickening of both the longitudinal and circular muscle fibers in the mid-sigmoid colon.[4-6] This lesion was located in 6 patients and presented as a focal area of narrowing (Fig 12).

The patient in Fig 12 had right lower-quadrant pain. We did



Fig 8.—Radiograph of the transverse colon of the Fig 12 patient 24 hours later with a repeated barium enema examination shows resolution of this suspected abnormality confirming the presence of a sphincter as the original cause of narrowing.



Fig 9.—Abdominal radiograph in the supine position demonstrates an abrupt transition between the normal caliber and significantly narrowed abnormal appearing colonic segment in the splenic flexure. This abnormality also involves a large portion of the descending colon.



Fig 10.—A focal area of narrowing is present without muscosal ulceration or irregularity on this spot image of the splenic flexure (arrow).

not identify any evidence of mucosal ulceration and the area of narrowing in the sigmoid colon did not change throughout the study. Glucagon in a 0.5 mg intravenous dosage was prescribed and within minutes the lesion resolved.

The sphincter of Rossi was found in 4 patients and varied from a focal (Fig 13) to a more diffuse area of narrowing (Fig 14). This sphincter is functional and without anatomic etiology.[2]

In conclusion, we have reviewed a series of barium exams and report on the frequency of certain colonic sphincters along with the reported etiologies and radiographic appearances.

Knowledge of the expected locations and appearances of these sphincters with close attention to patient clinical history can direct the radiologist to manipulate the position of the patient, insufflate more air or administer glucagon; these steps can help differentiate between a sphincter and organic disease thereby preventing unnecessary intervention.



Fig 11.—A persistent narrowing (arrow) is present in the sigmoid region.



Fig 12.—This spot compression radiograph demonstrates an area of narrowing in the sigmoid colon (arrow) with definite overhanging edges and sharp transition from the normal and abnormal bowel.



Fig 13.—Lateral radiograph of the rectosigmoid region demonstrates a smoothly tapered area of narrowing (arrow).



Fig 14.—Frontal spot radiograph with compression of the sigmoid colon demonstrates an area of narrowing (arrow) that involves a larger segment of bowel than the previous example.

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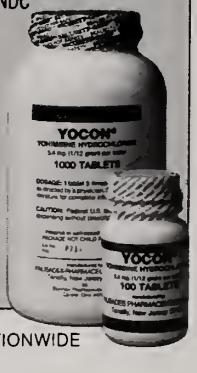
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SUB-ZERO

Low Predictive Value of an Elevated Prothrombin Time for Bleeding on Oral Anticoagulation

Edward N. Shen MD FRCP(C), FACC, FACP

This study is a retrospective analysis of 39 consecutive patients who had a prothrombin time of over 25 seconds with respect to the bleeding complications. This study finds that the overall risk of bleeding is low, 2/39 (5.1%), that there is no statistical difference in the values of the patients who bled when compared to those who did not, and that patients who bled tended to have a clearly identifiable precipitating event.

Introduction

The prothrombin time (PT) has long been the standard measurement of the degree of anticoagulation achieved in patients on oral anticoagulants, notably warfarin (Coumadin). This has been used as a predictor of the risk of bleeding. A PT within the range is regarded as safe, and a PT above the range as dangerous. Many patients are put through unrealistic regimens and frequent venous punctures just to manipulate the PT up or down 1 or 2 seconds. The use of the international normalized ratio (INR) allows for elimination of interlaboratory variations, but the same premise is unchanged. This study analyzes the incidence of bleeding in a group of patients who had a PT of over 25 seconds as recorded by a local hospital hematology laboratory over a randomly chosen period of 3 months. This study attempts to evaluate just how risky it is to have an elevated PT, the nature of the bleeding events and whether the risk increases linearly with the magnitude of the PT.

Materials and Methods

A request was made to the director of the hematology laboratory of Straub Clinic and Hospital to randomly choose a 3 month period and identify all patients in this period who had a PT of over 25 seconds. A retrospective analysis was made of the patients' clinic and hospital charts to obtain the incidence and nature of any bleeding events. The period empirically chosen was January 1 to March 31, 1992 and the analysis was made in July 1992.

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Results

A total of 39 patients were identified as having a PT of over 25 seconds. They all were on warfarin. The laboratory had not adopted INR at that time and the values are, therefore, unavailable. The patient characteristics, the PT values, and the nature of the bleeding events are shown in Table1.

The mean age of the patients was 63 years ±13 years. The most common indication for anticoagulation was deep vein thrombophlebitis, occuring in 15 out of 39 patients (38%), 5 of whom had concurrent pulmonary embolism. Two patients were anticoagulated for pulmonary embolism alone. The next most frequent indication was atrial fibrillation, with 7/39 (18%), followed by transient ischemic attack (10%), stroke (10%), valve replacement or repair (7.7%), and vascular graft thrombosis (5.1%). Less common indications include cardiomyopathy, arterial embolism, post thrombotic syndrome, and hypercoagulable state, each with 1/39 (2.6%).

In 20 of these patients, the PT values were obtained during chronic warfarin therapy; in the rest, the PT values were recorded sometime during initiation of warfarin. In 4 of these patients (No 1, 24, 29, 39), the elevated PT values were obtained within 1 week of initiation of therapy. Patients No 1 and 39 also were on heparin.

Two patients (No 19 and 38, Table 1) had a bleeding event.

The first patient was a 58-year-old woman with blue-toe syndrome, aortoiliac embolization requiring warfarin. The PT was recorded to be 26.2 seconds and 26.9 seconds on 2 separate days. She developed a thigh hematoma secondary to trauma, which resolved without specific therapy.

The second patient was a 78-year-old woman who suffered a right hip fracture during a fall, and she underwent hip replacement on the same day. Five days postoperatively, she exhibited hypoxemia with pulmonary embolism and left leg deep vein thrombophlebitis, necessitating the use of warfarin and an inferior venal caval filter. Her PT was documented to be as high as 34.9 seconds. She had bleeding into her right hip requiring transfusion and Vitamin K. She did well on conservative management.

Discussion

The incidence of bleeding in this group of 39 patients with a PT ≥25 seconds was 5.1%. This is at the lower limit of the incidence of bleeding of all patients on warfarin in the literature (1.2% to

TABLE 1.— Characteristics of Patients with Prothrombin Time ≥25 Seconds

Pt No.	Age/Sex	Diagnosis	Indication	PT in Secs	Bleeding Occurred
1	81/M	CVA, CA	DVT	27.8	-
2	78/M	CM, AF	AF	27.5	-
3	82/M	HTN, CVA	CVA	26.0	-
4	73/M	AF, TIA	AF, TIA	26.6	-
5	77/M	DM,HTN,CVA	DVT	28.3	-
6	77/M	CAD, CA	DVT, PE	33.7	-
7	86/M	AMI	AF	25.1	-
8	65/M	CA	DVT, PE	27.1	-
9	71/M	HTN,DM,CVA	AF	36.9	-
10	58/M	PLT	DVT, PE	28.3	-
11	52/M	MVr	MVr	25.4	-
12	78/M	CVA	AF	26.1	-
13	72/F	CA	DVT	33.8	-
14	65/F	MVR	MVR	25.4	-
15	75/F	AAA	AF	26.0	-
16	63/F	CA	DVT	39.8	-
17	83/F	CAD	AF, CVA	34.4	-
18	78/F	CA	DVT	25.9	-
19	58/F	AE	AE	26.9	thigh hematoma
20	39/F	DM,RF,PVD	GT	27.7	-
21	37/M	TIA	TIA	28.3	-
22	70/M	DVT	DVT	25.2	-
23	70/M	COPD, CVD	TIA	44.0	-
24	80/M	DM, CVA	CVA	28.2	-
25	64/M	CM, CAD	CM	47.3	-
26	42/M	DVT	DVT	34.7	-
27	70/F	HTN, CAD	DVT	39.4	-
28	62/M	CVA, TIA	TIA	30.9	-
29	47/F	DM,PVD,CVA	GT	41.4	-
30	80/F	MVR	MVR	34.1	-
31	56/F	DVT, PE	DVT, PE	26.4	-
32	67/F	PTS	PTS	39.9	-
33	38/M	HIV	HC	26.2	-
34	73/F	DVT	DVT	28.8	-
35	65/M	DVT	DVT	38.2	-
36	63/F	PE	PE	28.3	-
37	70/F	AF,HTN,PVD	AF	60.7	
38	78/F	HF, HR	DVT, PE	34.9	bleeding hip
39	62/M	HTN	CVA	28.2	
Total	67 ±13			32.3 ±8.5	

Abbreviations
AAA=abdominal aortic aneurysm, AE=arterial embolism, AF=atrial fibrillation, AMI=acute myocardial infarction, CA=carcinoma, CAD=coronary artery disease, CM=cardiomyopathy, COPD=chronic obstructive lung disease, CVA=cerebrovascular accident, CVD=cerebrovascular disease, DM=diabetes mellitus, DVT=deep vein thrombophlebitis, GT=graft thrombosis, HC=hypercoagulable state, HF=hip fracture, HIV=human immunodeficiency virus disease, HR=hip replacement, HTN=hypertension, MVR=mitral valve replacement, MVr=mitral valve repair, PE=pulmonary embolism, PTS=post thrombotic syndrome, PVD=peripheral vascular disease, TIA=transient ischemic attack

42.4%).[1] The PT for the entire group was 32.3 ±8.5 seconds (mean ±1 standard deviation). It is notable that the mean PT of the 2 patients who bled was actually higher than the mean PT of the remaining 37 who did not (30.9 ±5.7 versus 32.4 ±8.7 seconds, respectively). The lack of a linear relationship between the magnitude of the PT and the actual bleeding risk is further highlighted by the fact that there was no bleeding at all in the patients with the highest PTs (3 over 40 seconds, 1 over 50 seconds, and 1 over 60 seconds). Despite the advanced age in this high risk group, with its attendant predisposition to ischemic cerebrovascular disease,[1,2] there was no intracranial hemorrhage. Demonstrating the PT in INR values rather than seconds may smooth out some fluctuations in individual values, but these findings should not be significantly affected. In the majority of these patients, the PT values were obtained at least 1 week after initiation of therapy and should not reflect spuriously high values related to the early depletion of the clotting factors with shorter half-lives (for example, factor VII with a half-life of 6 hours). Only 2 patients were on heparin concurrently, and neither of these patients bled.

The 2 patients who bled had a clearly identifiable precipitating cause: Prior hip surgery or physical trauma to the thigh. It may be inferred that bleeding from anticoagulants is relatively uncommon without a precedent cause or precipitating factor.

Frequently in medicine, there is a near religious or fanatical faith in numbers, as in drug levels or therapeutic ranges. The presence of a therapeutic range virtually binds the physician to doing everything humanly possible to keep the patient in range, frequently without prior knowledge or interest of how such values are determined in the first place, and without appreciation that no 2 patients are alike. The notion of something that can be defined in seconds implies precision, and the availability of a fixed range promises effectiveness and safety. In the case of PT and warfarin, it has been shown that in patients with higher INR, the risk of bleeding is increased.[1,3] This is, however, far from being an all-or-none phenomenon, as this study demonstrates. The value of a high PT in predicting bleeding is in reality very poor. In a major study comparing 2 levels of anticoagulant intensities in patients with prosthetic heart valves, it was actually the minor bleeding that was increased with the higher INR, with no stastistical difference in major bleeding (bleeding requiring transfusion) among the 2 groups.[3] It might be more important to be cognizant of the established risk factors of bleeding with warfarin therapy (age ≥65 years, female, history of gastrointestinal bleeding, stroke, atrial fibrillation, recent myocardial infarction, congestive heart failure, renal insufficiency, alcoholism, cancer or severe anemia).[4] It is perhaps wiser to lessen the dosage in these patients, with tighter control of the PT rather than to accept a blanket therapeutic range for all patients—high or low risk. It is quite probable that a high-risk patient would bleed despite strict control, and a low-risk patient easily tolerates a PT of, for example, 35 seconds or an INR of 9.

Even though less intense warfarin therapy could reduce the risk of bleeding, the current system of PT measurement (be it by seconds or by INR) as an index of bleeding risk is far less precise than the term "therapeutic range" implies. Alternate parameters should be sought, for example, monitoring the native prothrombin antigen.[5] These, together with an astute awareness of risk factors and potential precipitating causes, can serve to ultimately diminish the bleeding risk of patients on warfarin.

Conclusion

Prothrombin time has long been the standard by which anticoagulant activity and bleeding risk with warfarin have been measured. This study demonstrates that the magnitude of the PT itself had a very low predictive value for bleeding events, that most patients with high PT did not bleed, and that bleeding was generally related to a clear predisposing factor. This also suggests the need for a more sensitive risk index than that afforded by PT and an awareness of high risk subgroups rather than blind adherence to a therapeutic range.

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Brief Communications

Prolonged Static Magnetic Field Exposure and Myeloma

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Recently, concern about exposure to electromagnetic fields has been expressed.[1-4] Although a definite cause and effect between these fields and cancer has not been established, we report a case in which the patient, who slept on a magnetic mattress for 5 years, developed myeloma.

Case Report

A 71-year-old Japanese man, who had retired from his position as an accountant supervisor, fell and fractured his T-12 vertebrae. He had anemia, monoclonal protein spikes in his urine and serum, an abnormal bone scan with multiple areas of increased activity, and IgA myeloma was confirmed by bone marrow examination.

For 5 years he had slept on a magnetic mattress, about 72 in x 32 in x 2 in, and a pillow, about 24 in x12 in x 2 in, with 20 mm round, flat magnets, each with a magnetic flux of 900 Gauss, 1.09T, evenly distributed: 88 in the mattress, 40 in the pillow. A Geiger count disclosed no radiation from the magnets.

Discussion

The etiology of myeloma, believed to be a malignant disease of the bone marrow, is unknown.[5] Recently, artificially generated sources of EMF have been suggested as a risk factor for cancer. Whether natural or static magnetic field exposure is a risk factor is unknown.[6]

No reports were found in a 10–year Medline literature search for EMF exposure that caused myeloma. In this patient, there is no proof that the prolonged magnetic field exposure from the mattress and pillow caused his myeloma. However, the possibility of prolonged static magnetic field exposure inducing transformation of benign plasma cells to malignant myeloma cells is raised.

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The Robert T. Wong Lectureship February 1994

J.I. Frederick Reppun MD
Past Editor of the HMJ
Retired General Practitioner

R. Michael Blaese MD, chief of clinical gene therapy at the National Center for Human Genome Research, was introduced by Chris Gulbrandsen MD, dean of the UH John A. Burns School of Medicine, to an audience of about 40 persons during the Robert T. Wong Lectureship that was open to the general public. Dr Blaese had been lecturing all that week in Honolulu. For this, his last lecture, he chose the general topic of "Gene Therapy."

Electing to discuss the genetic aberrations that afflict humans, Blaese revealed the impressive figure that there are some 4,000 so-called inherited diseases in humans.

In simple terms, gene therapy consists of inserting genes into a human cell to program its function, similar to slipping a program diskette into a computer disk drive. The newly programmed gene is then inserted into the nucleus of a cell of a patient. This is not easy to do. Research, however, has revealed a successful way of doing this by means of using transfer agents, the best and most practical of which are retroviruses (RV), which contain only 3 genes, as compared with 100,000 genes in a human. The introduced good (or bad) gene carried by the RV is integrated into the chromosome that has a "long-term repeater" at both ends to assure that the successful implant is not short-lived.

At this point, Blaese digressed a bit to point out that it is possible to transfer desirable, as well as undesirable, genes in or out. This poses an ethical dilemma because no one wants to see a monster grow; nor should a theoretical gene that would guarantee an IQ of 250 be experimented with. Consequently, such research has strict monitors overlooking it: one is a special advisory committee of the NIH and the other is the FDA. The United States is the only country, so far, that has this control in operation.

Under guidelines, therefore, gene therapy is limited to non-germinal organs and tissues in order to avoid the possibility of the inserted or extracted gene affecting the next generations. Somatic cell tissue ex-vivo is an acceptable source for research, but reproductive cell tissue is specifically forbidden.

Additionally, it has been found that tissues of the bone marrow, muscle, liver and kidney can be experimented on, but that the nerve cells and brain cells are not usable because, unlike the cells of the rest of the human body, these do not replicate

periodically.

Even with these somatic tissues, work has been too slow and difficult to be practical. Consequently, the bone-marrow stem cell, which can be easily harvested, is the basis of current research; umbilical cord blood is loaded with stem cells.

Blaese has focused his therapy by the use of genes on SCID—Severe Combined Immune Deficiency—a disease that is quite rare but amenable to such therapy. He went on to describe this success story.

It was first tried on mice, then on monkeys, but the success was transient, although dramatic; disappointingly, the beneficial elements residing in the transfused cells found themselves without "transportation," ie, being able to transfer the benefit to the donee's own cells, as the transfused cells died out at the end of their life cycle. The answer came when the researchers switched to using the T-cell lymphocytes that were much more long lived.

Some of the SCID patients were found to have a deficiency of ADA (adenosine deaminase, an enzyme) which resulted in an accumulation of a toxic desoxyaminoacid peptide. Blaese indicated that there are 30 such ADA-deficient kids in the world, 5 of whom met the criterion of bone-marrow compatibility that allowed for transfusion.

The pride in the accomplishment of successful gene therapy was exemplified by Blaese with a slide on the screen of a group picture of these girls and their families and supporters, then 3 years post-therapy. He also cited 3 other children who are doing well as a result of cell-mediated gene therapy, rather than humoral gene therapy.

Dr Blaese spoke briefly about such therapy with respect to cancers: The successful use of cytokines against lung cancer in mice and of gene therapy against solid tumors. As an example of the latter, he illustrated the cure of a mouse sarcoma by the injection into it of a Herpes-medicated thymidine kinase gene. That sarcoma nodule regressed completely, whereas a similar, untreated one, on the other side of the same abdominal wall, kept on growing. This illustrated the specifically local beneficial effect of gene therapy, as contrasted with the unfortunate cytotoxic effect of the chemotherapy for cancer on all the other healthy cells of the body.

In answer to a few questions from the audience, Blaese expressed considerable optimism that a successful treatment for AIDS was in the offing, but that the costs of gene therapy are high—approximately $500,000 a year.

The Robert T. Wong Lectureships are designed to present to our medical community the "cutting edge of scientific biomedical research."

Our peripatetic medical reporter is our past editor of the Journal, *and he continues to support our publications. Mahalo, Fred.—ED.*



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News and Notes Henry Yokoyama MD

Life in These Parts

Overheard.—The patient, while being wheeled into surgery, muttered: "I hate this QUEST. I can't wait to get back to work so I can get *real* insurance." (Submitted by Herbert K.W. Chinn)

Hawaiian Rent All.—Sign at corner of Beretania and McCully: "An Open Mind Learns More Than An Open Mouth." (Our favorite philosopher has returned)

Physician Moves

July.—ENT man **Wilson Murakami** opened his office at Kapiolani Medical Center, Ste 1120 and Pali Momi, Ste 250.

David Hiranaka (MD, DMD) and **Joan Greco** (DDS) opened the Kona Center of Facial Surgery.

August.—Gastroenterologist **Neal Shimoda** joined his dad and fellow gastroenterologist **Stanley Shimoda** at 321 N Kuakini, Ste 503.

Pediatric neurologist **Gregory Y. Kim** opened his practice at Kapiolani Medical Center, Ste 1000 and at Windward Pediatrics, 45-710 Kamehameha Hwy, Kaneohe.

Don Purcell (who does primary care, internal medicine, psychiatry and pain management) joined the Meridian Medical Clinic in the Manoa Marketplace.

FP **Thomas Binney Williamson** joined the Wilcox Medical Clinic in Waimea. Tom was born and raised on Oahu, but his great grandfather, William Danford, came to Kauai in the 1800s from Ireland, and Tom's parents both were born in the old plantation hospital that now houses Wilcox Medical Clinic.

Neurologist **Elizabeth Bjornskov** joined the Kauai Medical Group.

Sportsmen: Of Eels and Men

In July, veteran skin diver **Tom Frissel** was diving off Mokuleia with diving partner K.W. The fish were swarming. Tom dove to the bottom and had just speared a fish when he glimpsed a four-foot eel swimming toward him. The eel grabbed his right hand. For a few agonizing seconds, Tom repressed his instinct to jerk his hand free. Fortunately the eel realized his error and released the hand, which still needed eight stitches. As soon as the stitches were out, Tom was back diving again.

DLS Golf Tournament Hi Lites

We watched venerable sportsman **Tommy Chang** take a smooth, easy swing with his Heaven Wood (No 7 Callaway) on the 160 yard 16th Hole at Mililani. The ball took a high elliptical path toward the flag, took a bounce and disappeared. **Robert Ogawa** insisted the ball went into the hole, but the others, **Elmer Baysa, Henry Yokoyama, Allan Papst** and even Tommy himself were skeptical because two tournament officials lounging near the green did not even get up. Bob was right, Tommy retrieved his errant ball wearing a beatific smile that lasted and lasted. We rejoiced with him because he had won the free use of a Pflueger Honda for one year, unlike his three other hole-in-ones.

Others who won merchandise prizes for being closest to the pins were: 3rd Hole–Gareth Yokochi; 6th Hole–Allan Papst; 12th Hole–Gordon Ontai; and 16th Hole–Bruce Sol.

Conference Notes

Cardioforum: Trends in Cardiovascular Health Care "Modern Management of the Angina Patient" by William W. Parmley, Professor of Medicine, Chief, Division of Cardiology, UCSF; Editor-in-Chief *Journal of the American College of Cardiology*, at the Ihilani Resort on Sunday, July 31, 1994. (Sponsored by U of Wisconsin Medical School and supported by Pfizer.)

Classification of Angina

- Stable angina
- Unstable angina
- Post-infarction angina
- Asymptomatic patient with multiple risk factors

Classified Notices

To place a classified notice:

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Four Factors in Angina

- Heart rate
- Contractility
- Blood pressure
- Heart volume

Vasoconstriction.—Treat angina with a drug that relieves vasoconstriction.

Diagnostic tests.—Perfusion scan is more sensitive than EKG; shows wall motion.

Angina spectrum.—A. Variant or Prinzmetal's angina (spasm); B. Mixed angina (Combination fixed obstruction and spasm); C. Obstruction alone.

Evidence of excess coronary vasoconstriction:

- Variant angina
- Mixed angina
- Unstable angina
- Silent ischemia
- Syndrome X

• Unstable angina a/c increased thromboxane B_2 therefore ASA > anti-platelet aggregation
• Silent Ischemia = (iceberg) a/c
High pain threshold
Diabetes Mellitus
• Established Angina:
50% of all pts have SMI (silent myocardial ischemia).
3 of 4 attacks are silent.
• Silent Myocardial Ishemia: Common, eg, Framingham Study 25% of men; 1/3 of MIs
Does it matter re silent ischemia?
MRFIT: Abnormal EKG without angina is *not* benign.
• Silent ischemia without angina has a 3-fold increase in death risk.
• Unstable angina has a 3-fold increased risk
• Post MI Angina: Increased mortality with ST depression
• Non-Q wave MI: Increased risk with ST depression
CAST (Coronary Artery Surgical Trial): Patients with mild angina had admission treadmills with ST depression; (ie, the ischemia, not the perception of angina is important). In treadmills 6 months post-op, patients without ischemia did better than patients with angina or ST depression.
Changes Preceding Ischemia: Rise in heart rate 2° increased demand; ie, SMI (Silent Myocardial Ischemia) is a marker of more serious disease.
Vasoconstriction & Endothelial Response:
• Endothelial response to vasoactive agents, eg, acetylcholine>nitrous oxide system
• Endothelial Dysfunction a/c increased CAD risk factors, ie, increased CAD risk factors (eg, smoking, HTN, high serum lipids) cause vasoconstriction
• Alter vasconstriction response to vasodilator response by reducing CAD risk factors.
Cicadian Variation, Etiology:
• Elevated epinephrine and norepinephrine
• Increased platelet aggregation

Classification High Risk vs Low Risk Ischemia:
High Risk Ischemia: Need coronary angiography and surgical intervention
Studies: ETT fail to complete
ECHO/MVGA
Thallium scan

ASA: did best in AM, ie, reduced nonfatal and fatal MIs.
Beta blockers: reduced morning angina
N-Cap Study (of Ischemia) a. Nifedipine GITS: alone or with beta blockers. (At low heart rates, Nifedipine works, but with high heart rates, Nifedipine is not effective, therefore, combine with beta blockers.)
• Treatment of silent myocardial ischemia (SMI): Revascularization necessary because angina therapy doesn't work.

Conference Notes

"New Perspectives on the Relationship of Hormone Changes to Depression & Anxiety in Perimenopause" Stimulating talk by Elizabeth Lee Vliet from U of Arizona at John Dominis on September 8, 1994 and sponsored by Bristol-Myers Squibb.

Hypothesis: Hormones affect the neurohormonal system—William Osler: "It is more important to know what sort of patient has a disease than what sort of disease the patient has."

The Forgotten Woman—Health Problems Affected by Hormone Levels

a. Epilepsy
b. Asthma
c. Sinusitis
d. Allergies
e. Herpes
f. Yeast infections
g. Migraine
h. Chronic depression (The chemical messengers are affected by hormonal levels—we see the pattern, but we don't have enough data.)

Sources of stress for women: Women have built-in biological stressors (ie, menstruation/hormonal cycles; pregnancy, menopause) which increase physiological and social stressors.

Climacteric years: Reduction of hormone production in post-menopausal women viz up to 66% of estrogen production and 50% of testosterone production. (Most men don't function with testosterone 1/3 of normal levels).

Results of Estrogen Deficiency

- Final period: hot flashes, vaginal discomfort, bladder symptoms (around age 50).
- Subclinical disease: Heart disease (after age 55).
- Subclinical disease: Osteoporosis (after age 60).

Menopause in Perspective

- Depression
- Insomnia
- Nervousness

Neurotransmitters in Pain, Sleep, Depression

- Enhanced sleep: increased serotonin, decreased norepinephrine
- Improved Mood: increased serotonin, decreased norepinephrine, increased acetylcholine
- Diminished anxiety: increased serotonin, increased norepinephrine
- Decreased pain: increased serotonin, increased norepinephrine, increased dopamine.

Serotonin modulates brain centers on:

- Affect
- Sleep
- Appetite
- Thirst
- Sex feelings

Low E2 leads to low endorphin and serotonin levels. This triggers the locus ceruleus and high norepinephrine levels which cause:

- Restless sleep
- Hot flashes
- Intolerability
- Cardiovascular responses, eg, palpitations.

Current hypothesis of depression: neurotransmitter depletion at limbic system synapses.

Common Symptoms of Depression

- Fatigue
- Pain
- Sleep disturbance
- Anxiety, irritability
- Gastrointestinal disorders

Fibromyalgia and fibromyositis symptoms in women (ages 35 to 50): Pain, insomnia, irritability may be related to hormone depletion.

Stress disrupts homeostasis and causes

- Psychological symptoms: Anxiety, depression, sleep problems
- Physical illnesses
 - Immune system disorder
 - Infections
 - Allergies
 - Autoimmune disease
 - Cancer
- Adrenalin over-activity
 - Headaches
 - Hypertension
 - Ulcers
 - Colds
 - Eczema
 - Atherosclerosis

Available estrogens

- Oral (Natural)
- Micronized 17-B estrodiol (Estrace)
- Conjugated equine estrogens (Premarin)
- Piperizine estrone sulfate (Ogen)
- Esterified estrogen
- Oral (synthetic)
 - Diethylstilbestrol
 - Ethinyl estradiol
 - Quinestrol

Estradiol is a major premenopause estrogen.
Estrone is a major postmenopausal estrogen.
17-B Estradiol

- Increases arterial blood flow
- Improves cardiac output
- Lowers systolic and diastolic BPs
- Lowers peripheral vascular resistance

Hormone replacement

- Improves memory
- Improves mood
- Increases energy level

Evaluation before hormone replacement therapy:

a. Do basic chemical profile
b. FSH
c. Estradiol
d. Testosterone levels

S/P Menopause may require higher doses of ERT
Moody women: Add testosterone to 17-B Estradiol

The case for estrogen replacement therapy: (esp with prevention of heart disease in post-menopausal women)

The causes of death among American women (ages 40 to 65): 1) Heart disease, 2) Cancer, 3) Stroke, 4) Cirrhosis, 5) Accidents.

Mortality of women older than 50

• Cardiovascular disease	93%
• Breast cancer	4%
• All other cancers	18%

Oral estrogen and serum lipoproteins: Increase VLDL, lower LDL, and increase HDL.

ERT and breast cancer: The incidence of breast cancer rises with menopause. The 1991 Statistics of Breast Cancer: 180,000 cases/yr with 45,000 deaths/yr (ie, less than 1 death in 4 cases of breast cancer).

Ecclesiastes 11:4 "If you wait for perfect conditions, you will never get anything done."

From Judge Patrick Yim's Desk

Bill Clinton's
Arkansas Medical Dictionary

Artery	The study of paintings
Bacteria	The back door of a cafeteria
Barium	What doctors do when patients die
Bowel	A letter like A, E, I, O, U
Cesarean section	A neighborhood in Rome
CATscan	Searching for a kitty
Cauterize	Make eye contact with her
Colic	A sheepdog
D & C	Where the president lives
Dilate	To live long
Enema	Not a friend
Fag	Former Arkansas governor
Fester	Real fast or quicker
Genital	Not a Jew
GI Series	Military ball game
Hangnail	Coat hook
Impotent	Distinguished/well known
Labor pain	Getting hurt at work
Medical staff	A doctor's cane
Morbid	A higher offer
Nitrates	Cheaper than day rates
Node	Was aware of
Outpatient	A person who fainted
Pap test	A fatherhood test
Pelvis	A cousin of Elvis
Postoperative	A letter carrier
Recovery room	A place to do upholstery
Rectum	Dang near killed 'em
Seizure	Roman emperor
Tablet	A small table
Terminal illness	Getting sick at the airport
Tumor	More than one
Urine	Opposite of you're out
Varicose	Nearby—not far
Vein	Conceited

Conference Notes

Notes from David Borenstein's lecture **"The Current Approach to the Medical Diagnosis of Low Back Pain"** at QMC-UH on Friday, July 1, 1994. (David is Professor of Medicine, division of rheumatology and Professor of Neurological Surgery, The George Washington Medical School, DC)

Low Back Pain: Afflicts 80% of the population; is the second most-common affliction of humankind. It is an expensive problem. The estimated direct cost in 1990 was $24 billion.

re Choices of therapy: "Oh, the extremes people go to." (eg, inversion therapy—hanging upside down).

re Cauda equina compression: a. saddle anesthesia, b. bilateral sciatica, c. dysfunctional bladder and bowel, d. involves S2, 3, 4 (central disc), e. rare; f. needs radiographic technique; g. surgical intervention.

Ddx of Low Back Pain (LBP)

- With acute constitutional sys: wt loss, fever.
- Pain with recumbency.
- Persistent morning stiffness.
- Acute localized bone pain.
- Viscerogenic pain.

Conservative Therapy LBP:

- Controlled physical activity
- Physical modalities
- Local injection
- NSAIDs
- Muscle relaxants

The vast majority improve with conservative therapy.

re Physical Modalities:

- Heat or cold at home (Wet heat for stiffness and ice pack for pain).

re Muscle relaxants vs NSAIDs: Combination of both for severe spasm.

re Controlled Physical Activity: Two days of bedrest is just as effective as seven days of bedrest. (Patient should be up and active with tolerable pain).

re Local injection: Analgesic and counterirritant effects

re NSAIDs in LBP:

ASA	650 mg	4-6 hrs
Dolobid	500 mg	8 hrs
Anaprox	550 mg	8 hrs
Ansaid	100 mg	8 hrs
Motrin	600 mg	4 hrs
Lodine	300 mg	6 hrs
Toradol	10 mg	6 hrs
Cataflan	50 mg	8 hrs

re Chiopractic therapy: (66% of patients are satified with chiropractic treatment vs 22% who are satisfied with their family physician's therapy).

Chiropractors provide more *information: graphic descriptions; Pt instructions* and show *overall concern.*

Physicians say: "This is what I want you to do." Pt assumes a passive role rather than an active role.

Chronic Pain Therapy: Goal is to maximize functions.

- NSAIDS
- Muscle relaxants
- Tricyclic antidepressants
- Back exercises, flexion, extension
- Aerobic exercises
- Local and regional injections
- TENS
- Biofeedback
- Stress management
- Vocational rehab

re Spinal Stenosis: Causes vascular compression, ie, angina of spinal roots.

Failed conservative therapy when

- Low back pain alone
- Pain below knee
- Anterior thigh pain
- Posterior thigh pain

Localized LBP workup

Plain x-ray
Medical evaluation
Muscle evaluation
Psychological evaluation
Patient education
Conservative therapy

Osteoarthritis (OA) Sxs & Sys

Additive
Symmetrical
Insidious onset
Weight-bearing joints

OA therapy: NSAIDs at lower doses clearly are helpful.

re Fever and weight loss: etio osteomyelitis, neoplasm.

Diagnostic approach:

a. Plain x-ray
b. Bone scan
c. MR (soft tissue)
d. CT (bone)

- SLE with fever means infection

re Pain with recumbency: etio bone tumor, spinal tumor (tumor stretching nerve)

re Morning stiffness: Diagnostic approach:

- Plain x-ray
- Ferguson view of pelvis
- Bone scan (ro spondylolysis)

re Acute localized bone pain:

- Plain x-ray
- MR
- CT

DDX: Osteoarthritis vs tumor, Paget's, Sickle cell

Any change in symptoms: More aggressive evaluation necessary

re Viscerogenic Pain:

- Colicky pain: viscus
- Tearing pain: aneurysm
- Episodic pain: endometriosis

re Sciatica: Pain with flexion: MR and CT with contrast

Herniated disc Rx epidural cortisone, decompression surgery

re False positives

CT	34% false positives
MR	31% false positives
Myelogram	25% false positives

Therefore, these studies should be confirmatory, not diagnostic (ie, use to confirm your suspicions).

re Sciatica: 2. Pain with extension: Spinal stenosis (if plain x-ray, MR, CT are positive) Rx: epidural cortisone, decompression surgery

re Anterior thigh pain

- inguinal hernia
- hip disease
- urologic disease
- aneurysm
- retroperitoneal tumor

re lateral or posterior thigh pain:

a. referred pain (treat with injection)
b. HNP (higher) eg, L3, L4 (decompression).

One man's recommendation is another man's hammer.
The question is asked, "If these are merely guidelines for cataract surgery, then what is the problem?" The answer is plainly that some PROs and state medical boards could hardly wait to establish harsh penalties for care outside the parameters. One state medical board sanctioned an eye surgeon for operating rather than keeping the patient's eye dilated to see around his posterior subcapsular cataract. And one PRO issued a citation against an ophthalmologist for failure to examine a post-YAG patient within 48 hours after the procedure. Loss prevention experts look on guidelines as providing liability protection for the doctor, and that may be so, but the guidelines can also be interpreted as threatening barriers, and a step beyond can engender a penalty.

Man was made at the end of the week when God was very tired.
The battle to negate the absurd patent obtained by Dr Samuel Pallin for the so-called frown or chevron cataract incision goes on. Ignoring medical ethics, the U.S. Patent Office has granted other ridiculous procedure patents also, including one for gender definition with ultrasonic imaging, which relies on existing and often used technology. Moreover, a Kansas-based corporation has obtained patent rights for impotence treatment relying on concepts used and discussed since 1933. The additional pain caused by this vicious patent-seeking greed is that Congress will now have to draft legislation, hold hearings, allow debate, and then pass a complex law to prevent this voracious violation of traditional medical sharing of methodology.

These bedfellows make strange politics.
In a surprisingly bold action, the AMA leadership joined with the AFL-CIO and the American Association of Retired Persons to state, "Covering all Americans is essential to effective insurance reform, eliminating cost-shifting, and ensuring patient choice of physician and health plan." The statement endorsed employer-employee responsibility, with a required level of employer contributions. The action supported no specific legislative plan, but kicked off controversy within the medical ranks. With the present stalemate over health system reform in Congress, one wonders why the leadership felt the need to make any statement at this time. Moreover, joining with two organizations which typically support centralizing power in Washington, can hardly be considered appealing to the AMA rank and file. Members can be certain that the AMA House of Delegates will bring strong questions to the Trustees at the interim meeting in December in Honolulu. HOS members should plan to attend to listen and view the debate. The delegates will surely face resolutions designed to rescind the previous House authorization allowing the Board to do what it deems best in the political arena.

Coagulating coalition comprises confident consortium.
In California, the Legislature rejected a therapeutic drug law for optometrists, in part due to the concerns about the treatment of AIDS patients. Two AIDS advocacy groups warned the legislators that the bill could allow OD gatekeepers who lack the medical training needed to recognize and properly refer AIDS patients. Some AIDS advocates feared that optometrists might even try to treat AIDS-related eye infections. The California Association of Ophthalmology organized a coalition including the CMA, the California chapter of the National Medical Association, the California Council of the Blind, the AIDS advocacy groups, and the California chapter of the American Diabetes Association. Hawaii's legislature has agreed to study the optometric use of therapeutic drugs, despite the fact that there is no demonstrated need for such legislation.

Sneak attack on state malpractice reform.
Repeated attempts to move Congress to legislate liability reform have been frustrated. Early on it was evident that the 1993 promises of Hillary Rodham Clinton to the AMA House of Delegates to relieve physicians of the ominous specter of medical liability were just that, empty promises. The trial lawyers quickly mobilized, and the White House and Congress promptly acquiesced to bury meaningful liability changes. All the reforms, such as California's MICRA statute, have been at the state level. Now, lawyers have conspired to actually overturn some of those reforms. Through their lobbyists and political donations, the trial lawyers persuaded the House Judiciary Committee to amend the health care bill by substituting less effective federal language. Those on the gravy train know how to keep it rolling!

The more things are forbidden, the more popular they become.
An old joke was, "You can always tell when a lawyer is lying—his lips are moving." At this date, one could almost make the same aside for our politicians. The National Practitioners Data Bank (NPDB) was established by Congress over the objections of organized medicine, with the promise that the information therein would be confidential and released only to selected agencies. Now Member of Congress Wyden (D-Oregon) wants a semi-annual publication of the names of doctors reported to the bank, and the actions taken against them. The directories would be distributed free of charge to public libraries. It is hardly any surprise that 70% of Americans have come to doubt the integrity of Congress.

I could not make this up!
A Scottish bank has announced a policy whereby it will issue bank cards with photos which will allow transvestites to have two cards: One dressed as a woman and one as a man. In kilts, no doubt.

Addenda
▲ Only Congressmen (not the public) are allowed to check books out of the Congressional library with no time limit.
▲ More people filed for bankruptcy in 1992 than graduated from college.
▲ A gallon of gasoline costs $4.58 in Tokyo, $3.58 in Paris, $1.11 in Chicago, and $0.74 in Quito, Ecuador.

Aloha and keep the faith.
rts
■

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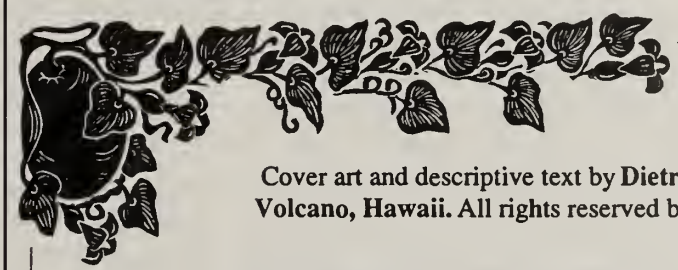
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Slowing of the Sun

Everyone knows that the goddess Hina was an expert at *kapa* making. So silky and soft was her cloth that we have never seen any like it.

But Hina did not always have an easy time with her clothmaking. The moist fibers had to be beaten together into sheets and then dried in the open sun. And in those early times, before Maui was born, the days were very short because the sun just raced across the sky and went down before anyone could get any work done. Hina never had enough time to make and dry her cloth with such a speedy sun.

The goddess grumbled to her son Maui about the sun speeding across the sky. The kapa cloth simply had neither time nor warmth to dry.

Young Maui accepted the challenge of slowing the sun for his mother. He beat the blazing sun into submission and forced it to slow its present pace. A mother's boy this Maui.

Editorial Norman Goldstein MD

The Hawaii Medical Association Annual Meeting

Our 138th Annual Meeting held on the Big Island was a resounding success. Many thanks to our local speakers and our invited Mainland presenters. *Mahalo nui loa* to the more than 50 exhibitors who helped make our "Women's Health" program one of the very best.

Highlights of the House of Delegates meetings are presented by Dr Leonard Howard, 1993 Speaker of the House. Dr Elizabeth Adams covered the Scientific Sessions for the *Journal.* Many thanks to Len and Betty.

Several of the program speakers submitted brief manuscripts to the *Journal* (September 1994 special issue on women's health) as teasers to encourage attendance at the Scientific Sessions—and they worked! The attendance by members, guests, and spouses was excellent.

The editors and staff were very pleased to hear comments about our *Journal* from the President of the American Medical Association. *Mahalo* Dr Robert McAfee.

Norman Goldstein MD, Editor

Historical Notes

John A. Breinich
Hawaii Medical Library

The In Memoriam project of the Hawaii Medical Association Auxiliary was first suggested by Mrs J. Warren White and a committee was formed in 1952. The first two volumes containing biographical sketches and photographs of doctors who had practiced in Hawaii and were deceased were completed in time to be presented to the HMA in 1956 on the 100th anniversary of the Association. Mrs Betty Katsuki worked on the In Memoriam volumes for more than 30 years until she retired from the project and moved to the Mainland. Mrs Marnie Straehley took over as chair of the In Memoriam Committee and continued until she too retired and moved to the Mainland. The committee was disbanded and the In Memoriam project suspended, leaving a valuable collection of seven volumes containing biographical sketches of 621 doctors dating from the early 1800s to 1985. There are also 407 photographs that formed the basis for the Hawaii Medical Library's photograph collection, which now contains more than 5,000 individual photographs.

In addition to the written sketches, Mrs Katsuki collected newspaper clippings and other biographical information about hundreds of physicians in Hawaii. This valuable resource was given to Hawaii Medical Library and the information is being cataloged by our faithful volunteers, Mrs Fran Linman and Mrs Phyllis Hathaway. Additional biographical information on physicians in Hawaii is welcome. Dr Fred Reppun has researched Dr Tokue Takahashi and that information will be added to the biographical file. Any other information or research on physicians in Hawaii or photographs would be a welcomed addition to our collection. Any questions about historical information on physicians in Hawaii may be directed to the Hawaii Medical Library reference desk for assistance.

Medical School Hotline

Martin D. Rayner PhD
Assistant Dean for Research
Professor of Physiology
John A. Burns School of Medicine

Biomedical Research

Funding for biomedical research activities conducted by the John A. Burns School of Medicine (JABSOM) and its affiliated faculty lies within the upper half of U.S. medical schools. Included in this inventory are research activities conducted at the Pacific Biomedical Research Center, the Cancer Research Center of Hawaii, the Veterans Administration Medical Center, Tripler Army Medical Center, and the major hospitals in the community.

To maintain biomedical research at this level, however, there needs to be a greater understanding of the crucial issues facing biomedical researchers in Hawaii. Biomedical research is commonly perceived as being divided into clean-cut "basic" and "clinical" groupings, each having its own set of problems. At JABSOM, basic and clinical researchers have not benefited from the close association of MDs and PhDs in an academic environment. This is partially the result of not having an academic medical center where basic and clinical researchers can interact in a mutually rewarding fashion. In addition, most clinical researchers in Honolulu are divided by loyalties to individual institutions even as basic scientists tend to be divided by the disciplinary identities they assume.

Clearly, such professional isolation is unhealthy and unnecessary. Thoughtful scientists, however, maintain that significant research need not be expensive. What we need are interdisciplinary approaches and access to a range of knowledge greater than any one researcher can be expected to command. As competitive as research sometimes seems, it can be the most successful collaborative effort scientists can undertake.

Some of JABSOM's faculty have seized the opportunity to accept responsibility for fostering future research in Hawaii. They have taken the first steps to cross the inhibiting boundaries of space and discipline by challenging their own research assumptions. For example, the Department of Tropical Medicine has initiated discussions between clinical and research scientists on issues in immunology and infectious diseases. Also, effective interaction is taking place to develop and implement collaborative research activities between anatomy, biochemistry and pediatrics. An additional cooperative project is a recently funded multimillion dollar study on women's health which will cross disciplinary boundaries.

Biomedical research is alive in Hawaii. It can remain a growing enterprise despite the funding cutbacks at the local, national, and international levels. To maintain this momentum, biomedical researchers must be prepared to take risks to become more effective communicators and to collaborate. Hawaii is well known for its generosity in support of biomedical research. The local unit of the American Cancer Society and the affiliate of the Amercian Heart Association rank consistently among the highest per capita fund raisers in the nation. Making best use of the special opportunities for biomedical research offered by this multiracial, multiethnic society is one way in which we can make some return to the community we serve for their confidence in the value of research. Where else would good work be so willingly done on the nutritional value of macadamia nuts?

Finally, creative, aspiring researchers might profit from such innovations as a well-funded general clinical research center, better access to statistical support services, a Hawaii Medical Association-sponsored conference on biomedical research opportunities in Hawaii, and more frequent interdisciplinary discourse on research ideas.

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–Keith Katano,
Group Administrator,
Medical Arts Clinic

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HMA Council Highlights

The HMA Council meeting on September 2, 1994 was called to order at 5:40 pm by President Dr Andrew Don. Members present were: Drs F. Holschuh, President-elect; J. Spangler, C. Lehman, J. Chang, C. Kam, R. Stodd, L. Howard, E. Bade, B. Shitamoto, R. Goodale, T. Smith, D. Canete, H.K.W. Chinn, W. Dang Jr, P. DeMare, P. Hellreich, S. Hundahl, R. Kimura, M. Shirasu, K. Thorburn, C. Wong, J. Betwee, C. Kadooka, A. Bairos, W. Chang, W.W.L. Dang, G. Goto, J. Kim, J. Lumeng, J. McDonnell, S. Wallach; medical student delegate Anna Matteo; Alliance representative Mrs Paris Stevens.

Guests present were: Drs Gary Fujimoto and Dudley Seto of Pacific Medical Administrative Group (PMAG).

Staff members present were: J. Won, B. Kendro, N. Jones, J. Asato, J. Estioko, and A. Rogness, recording secretary.

Dr Don reported that the Governor's Advisory Committee on QUEST met, and both Drs Don and Holschuh conveyed the problems of implementation and other concerns. The QUEST representatives are doing their best to smooth out the problems. Any questions or concerns about QUEST can be presented to HMA's QUEST Task Force, who in turn will give it to Drs Don and Holschuh to present to the Advisory Committee.

Mrs Paris Stevens reported for the HMA Alliance. The HMAA annual meeting will coincide with the HMA Scientific Session. A newsletter is being sent out to introduce the incoming state and county presidents and will introduce the AMA Alliance President, Mrs Tippins. The HMAA has submitted its 1995 proposed budget and thanked the HMA for all of its support. The HMAA wants to continue in its great successes in fund raising, health education, and legislative action.

Drs Gary Fujimoto and Dudley Seto of Pacific Medical Administrative Group (PMAG) presented the history of PMAG and its goals for the future. PMAG would like to expand its activities to extend to all Neighbor Island physicians and work with group practice and HMOs. PMAG is interested in having HMA participate in the IPA as a for-profit group.

Actions

Council approved the following actions on the Proposed Budget for 1995: (a) That in the future, a detailed breakdown of expenses in excess of $5,000 be submitted to Council for review before the September Council budget session; (b) that the budget be approved subject to the reaffirmation that whatever comes out is a balanced budget. That any non-budgeted expenses under this budget contain a financial impact statement at the time of presentation to Council.

Council voted to postpone discussion of the Independent Physician Network (IPN) until the IPN Steering Committee's report is received at the House of Delegates.

In regard to the Nurse Prescriptive Authority Formulary Committee, Council approved that a letter be sent to the Board of Medical Examiners (BME) requesting that it seek a legal opinion from the Attorney General assigned to the BME to determine whether or not the bill contravenes the Pharmacy Act. John T. McDonnell MD will serve as HMA's representative on the formulary committee.

A motion to reconsider the endorsement of Cal Kawamoto for Senate did not pass. Council supported the HMA Executive Committee's decision to oppose endorsement of any political candidate due to the gray area as researched by HMA's attorney.

Council approved the Hospital Medical Staff Section's recommendations on a centralized credentialing verification service: (1) That the HMA pursue developing a centralized credentialing service; (2) that a volunteer task force be established with physicians, hospital staff, and credentialing personnel.

Council approved the recommendation that the Executive Committee, representing the HMA, write a letter to the editor of the *Honolulu Advertiser and Star-Bulletin* calling attention to the votes of Patsy Mink and Neil Abercrombie to exempt the minority members of Congress from ramifications of any national health care reform that would be enacted, and question why the two leading proponents would exempt themselves.

Component Society Reports

Honolulu.—Dr Leonard Howard reported the following: (1) the Summer Fun meeting at the Waikiki Aquarium was well attended and enjoyed by all; (2) anyone who wants to submit a resolution as a late resolution should do so before the annual meeting so Dr Howard has an opportunity to review it.

Hawaii.—Dr Craig Kadooka reported that Hawaii County had two meetings in August. Dr Kadooka attended the joint East/West Hawaii Society meeting and mentioned the speakers were good.

Maui.—Dr Barry Shitamoto reported that PMAG will be meeting with the county society in September and a new slate of officers will be elected.

West Hawaii.—Dr Theresa Smith reported that the county society attended the East/West Hawaii meeting, and Dr Robert Hollison was an interesting speaker. The county society will publish a newsletter for members who find it difficult to attend the county meetings.

For Information

Medical Savings Account.—Dr Theresa Smith reported that the Health Care Access and Economics Committee is submitting a resolution on medical saving accounts. She also presented interesting figures in support of an MSA program.

HMA Nominating Committee.—Dr Jeanette Chang reported that the committee met three times to consider physicians for elective offices. The slate of nominees was mailed to all membership on September 1.

HMA President's Message

Frederick C. Holschuh MD

Frederick C. Holschuh MD was installed as HMA President during the Inauguration Banquet. A full time emergency physician who co-founded Hawaii Emergency Physicians Associated in 1971, Dr Holschuh is a humanitarian who witnesses trauma, violence, and needless suffering regularly; he wants to see living conditions improve for his Big Island patients, and a halt to acts that kill, injure, and maim innocent victims. Here are his comments presented during his acceptance speech.

I am deeply honored to stand before you this evening as president of the Hawaii Medical Association. It is an honor to have been elected by our members.

My father many years ago had encouraged me to get involved with organized medicine but I wasn't interested initially. I'm grateful for my parents advice and encouragement.

Things were simpler in earlier years. I vividly remember walking into The Queen's Emergency Room in 1967, the night I arrived in Hawaii for the first time as a new intern. Dr Myron Shirasu was one of the first people I met.

Things were certainly simpler when Dr Bernard Scherman, Dr Paul Pfeiffer, and I first started working in emergency rooms in 1971 when HEPA was started.

Things were simpler when, as I learned from an old *Hawaii Medical Journal*, the annual meeting of the Hilo and Kona medical societies were held in Kona about 45 years ago, and the Hilo physicians went to Kona by boat. The meeting report included the members and the type of fish they caught.

In those days, there was a much more pervasive feeling of gratitude by patients for care, and trust in physicians and the health delivery system, which was basically individual doctors caring for people.

There are some very real problems eroding the foundation of our profession. The medical malpractice situation is out of control. Everyday, changes occur that create the atmosphere of medicine being just another business. The managed care fervor pits doctor against doctor, and worse—doctors are placed in adversarial positions with patients desiring care. So much of the impetus for reform of this great health care system is strictly financial. Granted, things can't go on as usual. As someone said an an AMA forum, "It's hard to continue spending nearly a trillion dollars a year on a system that makes few people happy."

My father always told me when faced with extremes that most decisions in the history of humans eventually are like a pendulum swinging—it will rest between extremes.

I only hope and pray as we evolve toward giant corporate medical practices that no medical graduate today will recognize 20 years from now—that there will continue to be a place for the one on one, individual practitioner approach to caring for patients.

We have been innundated in medicine with hassles and government control. Those early physicians coming to work in this island as plantation doctors and traveling to a Kona meeting by boat would have been amazed to hear of things like RBRVS, UR, QA, CQI, OSHA, SHPDA, CONs, HMOs, PPOs, PHOs, IPAs, SHIC, SAC, MAC, and QUEST. However, as Dr McAfee has said, "It is our duty as leaders to constantly remind our colleages not to let the hassles be an excuse for losing touch with the 'thrill of healing'."

We must work daily to restore the public's trust in the medical profession. Again to quote Dr McAfee, "We must practice medicine not only concerned with quality of care, but with the quality of caring."

In all of the debates over the reform of our health delivery system, of managed care by government, nurse prescribing, etc., we must approach the bargaining table not as self-serving individuals, but as the servants of only one master, our patients.

I want to spend a few minutes mentioning something that is very important to me: That is the disintegration of our values as a society, and of the fabric of our family structure. I've had the privilege of being involved with two men who influenced me a great deal as a medical student. One was the late Dr Carroll Behrhorst who brought healing to the Indians in the highlands of Guatemala. He realized early on, 30-plus years ago, that to bring medicine without changing living conditions was almost a disservice. He instituted a system of health educators who taught people nutrition, sanitation, and family planning, as well as the most important thing—personal responsibility.

The other was Dr Richard Saunders, an educator who went into Colombia, South America, with a program called "Futures for Children." He asked communities to decide for themselves what they wanted most for their children. Most wanted food, schools, clean water, etc. Both of these approaches over 30 years ago embraced the concepts that we now call empowerment. Empowering communities to direct their own destinies on a regional or local level. If we asked people today what they want for their children, most would probably say they want their kids to grow up free of fear and free from the ravages of drugs and violence.

We are here at the beautiful Ritz-Carlton Mauna Lani on the Island of Hawaii tonight, in this beautiful setting, on a majestic island that leads the state of Hawaii in the per capita rates of morbidity and mortality from every major category of disease including trauma.

Some of these statistics are now compiled in something called the "Survey of Social Indicators" which arose out of a Mental Health Association task force I've served on for four years. This island has the highest per capita number of drunk driving fatalities, twice the percentage of chemical dependency, and over twice the suicide rate of this state and every other state.

As Jeff Goldsmith said at an AMA leadership conference last February, "Many American physicians spend much of their time practicing at the bottom of a cliff trying to clean up the wrecks of American life-styles."

I heard a gentleman named Al Grant (president of a national organization of the State Offices of Rural Health) at a SHPDA,

State Health Planning and Development Agency, meeting just last week say "...public health is providing care to those who need it and don't want it...If we stopped delivering medical care and just worked on behavior modification and life-style changes, the results would be dramatic."

Someone once said to me, "You should practice medicine and not get involved in societal problems." I think, however, that all of us have an obligation to get involved in society's problems because there is no doubt a society that is sick produces sick people!

Dr. Reid Tuckson from South Central LA quoting a school child said, "...pity and compassion in a world of pain means nothing unless they lead to change." I think we must get very much involved in all the issues of societal decay and the effects on our patients. We need to be compassionate, but as leaders in the community we need to lead by example. We must be intolerant of family violence, drunk driving, drug use, discrimination against HIV-infected individuals, and smoking for that matter.

I am honored to be in the same room with Dr McAfee who has done so much in the campaign against family violence.

I think it is time society takes a hard look at our "civil rights gone wild" problem. We have to take a tough love approach to dealing with individuals who are chronically disabled by the ravages of alcohol and other drugs. I would like to see us look at the boot camp approach to dealing with people who are so disabled by alcohol and other drugs that they are a menace to themselves and others.

I know an HIV-positive woman in Hilo who had been arrested hundreds of times for prostitution and drug possession. She once told me, "I wish I'd been locked into a treatment program before I got this virus."

One of the most frequent visitors to the Hilo Emergency Room over many years was so enslaved by alcohol that most of his life he was involved with traumatic injuries, injuring others, comatose ER visits, ICU admissions, etc. Last weekend he was found dead leaning against a building in Hilo. Mike was in his 40s. We need to help these people help themselves in spite of themselves!

I offer these ideas as something to think about. If you hear me speak on these issues next year, don't be afraid I'm leading HMA in pursuit of windmills.

I want to close by describing what medical practice means to me: It is the 45-year-old cardiac arrest patient whom Dr Linden and I resuscitated in the Hilo ER who said simply, "Thanks for my life." It is the young college student who realized during an ER visit that I had was the doctor who had intubated and resuscitated her at age 13 during an asthma episode. She thanked me for her life and her ability to go to college. This is Dr McAfee's thrill of healing.

Let's all work constantly to preserve this very precious gift we receive from our patients—that of their trust in us. I pledge to do my best to try to achieve the goals of resurrecting the public's trust in us and our pride in this great profession. Thank you for this great honor.

Military Medicine

George B. Lisehora MD
Department of Surgery
Tripler Army Medical Center

Telemedicine Augments Advanced Laparoscopic Surgery

In 1989 laparoscopic cholecystectomy utilizing video cameras and monitors was formally introduced in the United States. The ensuing five years witnessed a relative revolution in gall bladder surgery. It was not long before enthusiasts were followed by skeptics to the nearest course and today, a mere five years later, nearly all gall bladders are removed laparoscopically rather than an open laparotomy. This rapid change was instigated by widespread acknowledgement of the benefits of minimally invasive surgery by the lay press and a populace enthralled with the idea of a painless risk free operation. Patients were referred demanding "that new telescopic laser surgery" and surgeons who did not want to lose a significant portion of their practice were soon performing laparoscopic cholecystectomy with varied amounts of training and supervision.

The collected evidence now shows that in addition to the benefits of decreased post-operative pain, earlier retum to work, and a shorter hospital stay, laparoscopic cholecystectomy, at least initially, also carries an increased risk of significant morbidity. The incidence of common bile duct injury increased in some centers by as much as 12 times. The Society of American Gastrointestinal Endoscopic Surgeons (SAGES) was among the first to recognize and attempt to prevent this complication. It published guidelines in 1990 recommending minimal requirements be met in training and in the supervision of initial cases to safely begin laparoscopic surgery. Since most significant duct injuries occurred during a surgeon's first 10 cases, it was recommended that the surgeon perform his or her first 10 cases under the supervision and guidance of someone who had done at least 25 laparoscopic cholecystectomies. This was difficult enough for surgeons in urban areas and was often impossible for surgeons in rural areas. Experts were flown at great expense all over the country to supervise and help initiate surgeons in the technique of laparoscopic cholecystectomy. Currently, the same enthusiasm is spilling over into more advanced and complex cases such as gastro-esophageal antireflux procedures, colectomy, splenectomy, and small bowel resections. To date, relatively few surgeons are performing such operations laparoscopically but the trend seems clear. Already the same pressures are coming to bear and many fear a high initial incidence of complications if surgeons are forced to ascend the steep learning curve without adequate training and available supervision.

James C. "Butch" Rosser MD is the director of laparoendoscopic surgery at Yale School of Medicine and sits on the New Technologies Board of SAGES with John Payne MD of Kaiser Permanente. Both surgeons have traveled to hospitals other than

their own to assist surgeons interested in progressing to advanced laparoscopic surgical cases. Dr Rosser has envisioned using telemedicine to allow him to be "telepresent" during advanced laparoscopic surgery and actually supervise a case as if he were standing next to the operating surgeon. He discussed these ideas with Dr Payne who recognized the great potential this would have in Hawaii where surgeons who would like help might be on another island. Dr Payne also was aware that the Command at Tripler Medical Center was interested in telemedicine and had already established teleconferencing links with many sites in the Pacific that are currently functioning in a subspecialty consult mode. Dr Payne introduced Dr Rosser to Tripler resulting in a joint venture between Yale School of Medicine, Kaiser Permanente, University of Hawaii, The Queen's Medical Center, and Tripler Army Medical Center.

On September 30, 1994, a six-day advanced laparoscopic surgery "Boot Camp" was held at Tripler. This intense course in advanced laparoscopic techniques and intracorporeal suturing was directed by Dr Rosser and his staff; it was attended by 12 civilian surgeons and 12 military surgeons. All involved were impressed with the scope, depth, and intensity of the training. The course culminated with the teleproctoring of attendees performing advanced laparoscopic surgery on patients while being proctored from a remote site.

On October 5, a Nissen fundoplication was performed laparoscopically in Tripler's operating room while the case was supervised from the hospital's video command center in a different wing seven floors below the operating room. The following day saw the same command center supervise another Nissen fundoplication at Kaiser Hospital approximately 3 miles away. Both operations went very well and the high value of teleproctoring was self-evident. Through a video surgustrator (similar to the video illustrator used by John Madden on Monday Night Football), CD ROM and instant slow motion replay, Dr Rosser has demonstrated that teleproctoring is safe and very effective. The proctorer sees the entire operating room through two video cameras in the room and also receives the image from the laparoscopic camera. The surgeon and assistants wear two-way audio devices and communication is instantaneous. A line, circle or dot drawn with a finger on the touch screen of the surgustrator in the video command center appears at the same site on the operative monitor in the operating room. Images from referenced CD ROM or an instant replay of what just happened may be piped back into the operating room to make teaching points and save operative time in the long run.

We now hope to expand this idea. We had military surgeons from Korea and Okinawa attend this course with the goal of teleproctoring advanced cases in those locations from Tripler in the near future. Drs Payne and Steve Nishida also plan similar demonstrations between Oahu and Neighbor Islands. It is our hope that thoughtful application of this technology will allow surgeons to develop advanced laparoscopic skills and apply them safely and effectively without experiencing a transient increased incidence of significant complications as we witnessed in laparoscopic cholecystectomy. For example, one of our graduating chief residents may be stationed in Korea next year when he is faced with a patient who would be better served by a minimally invasive approach. He might justly feel uncomfortable at the prospect because he had done only a few such cases during his residency. Rather than ship the patient to Tripler, he will only pick up the phone and invite us into his operating room via telemedicine. He will be guided by someone who has done the same operation many times before and knows the potential pitfalls and also knows the techniques of success. It will be just like old times:). [sic]

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HMA Alliance

Carol McNamee, Co-founder of MADD-Hawaii

A Decade of Difference—MADD in Hawaii

This year, Hawaii MADD—Mothers Against Drunk Driving—commemorates its 10th anniversary and looks back on a decade of effort to change attitudes and behavior about the acceptability of drinking and driving. The Honolulu, Maui, and Hawaii County Chapters of MADD—numbers 200 to 202 in the nation—officially began on February 12, 1984. A Kauai chapter was chartered several years later. The first seeds of change in Hawaii's views about impaired driving actually were planted two years earlier when a Hilo psychiatrist, Dr Michael Irwin, testified before the Hawaii legislature.

Dr Irwin's wife, Sherry, was killed by a drunk driver in 1981; he and his two-year-old son were critically injured. Lawmakers responded to Mike Irwin's compelling 1982 testimony by strengthening the state's basic DUI law.

Later in 1982 , Dr Irwin and State Representative Richard Matsuura spoke to members of the Hawaii Medical Association Auxiliary at a meeting in Hilo. The eventual result of that presentation was the Auxiliary's adoption of the campaign against drunk driving as a project. In 1983, Auxiliary members answered phone calls from the public when a movie about MADD's founder, Candy Lightner, was shown on NBC–TV. Bolstered by an outpouring of citizen concern (nearly 600 calls), Auxiliary leaders decided to start MADD.

The organizing committee, chaired by Carol McNamee, the 1982 to 1983 HMA Auxiliary president, included about 20 people who had called about the MADD movie. During the organizing process, the group decided to combine the official chartering of MADD with a conference on drunk driving. Candy Lightner, the national founder of MADD, was invited to be the keynote speaker. Lightner had become a national heroine by almost single-handedly raising public consciousness about drinking and driving. It was Lightner who said, "Drunk driving is a socially acceptable form of homicide."

On February 12, 1984, the conference "Drunk Driving: Everyone's Problem" was held as a joint project of the MADD Organizing Committee and the HMA Auxiliary. In addition to the daylong conference, a legislative breakfast, a Neighbor Island speaking tour, a one hour live appearance on the Perry and Price show on KSSK radio, and excellent media coverage, launched MADD in Hawaii. Carol McNamee (Philip McNamee MD) became the president of the Honolulu County Chapter; Leanna Stodd (Russell Stodd MD) led the Maui County Chapter; and Betty Ghosh (Manas Ghosh MD) became president of the Hawaii County Chapter. None of these three women could have predicted the extent of the commitment they had made on that day in 1984.

Once chartered, the Hawaii chapters of MADD lost no time in working toward their goals. Court monitoring became an important program; legislative advocacy began with the establishment of a DUI Consortium, which included representatives from about 10 agencies who discussed and supported legislative measures; annual candlelight vigils were held in memory of victims of highway crashes; the Jon K. Raneses Memorial Library was created to house impaired driver and victim support resources; youth programs were established; and public awareness projects were launched, the most visible being the annual Project Red Ribbon campaign.

Income to support MADD's programs has been generated through fund-raising events, memberships, the generosity of the corporate community, and grants—including a federal VOCA—Victims of Crime Act— grant which, since 1990, has partially supported the victim assistance portion of the organization.

Since 1986, the Honolulu Chapter has sponsored an annual holiday season MADD DASH fun run which now attracts more than 1,000 participants, provides awareness and education, and raises nearly $25,000 for MADD's programs. The 1994 MADD DASH will be held on Sunday, November 20 at 7:30 am starting in front of the downtown library at King and Punchbowl Streets. Members of the Honolulu County Medical Society will receive an entry form in the monthly HCMS *Bulletin*. Entry forms also can be obtained at running stores, 7-Eleven stores, and Gas Express stations. A MADD DASH has been held once in each Neighbor Island county—Maui in 1992, Kauai and Hawaii in 1993.

Alcohol-related highway fatalities have decreased from 100 in 1982—just before MADD was organized—to 66 in 1992, a decline of 34%. The decline in fatalities has not been a straight line. When there is a rise—as there was in 1993, MADD knows it must redouble its efforts to reverse the trend. For ten years these efforts have included help from the Hawaii Medical Association and its Auxiliary—now Alliance.

The Hawaii MADD organization extends its sincerest appreciation and a large MADD *mahalo* for the continuing support of the medical community. Unfortunately, these efforts must continue—highway crashes remain the number one killer of Americans from ages 5 to 32. Two out of every five Americans will be involved in an alcohol-related crash in their lifetimes.



Highlights of the Proceedings of the HMA House of Delegates October 7 to 9, 1994

The 138th Annual Meeting of the Hawaii Medical Association was called to order at 1:30 pm at the Ritz-Carlton Mauna Lani Hotel on the Island of Hawaii by **Speaker Len Howard.** Published parliamentary procedure and modus operandi were adopted by unanimous consent of the House. **Carl Lehman MD**, HMA Secretary announced the seating of 46 certified delegates out of 89 possible delegates, which constituted a quorum.

Len Howard MD delivered the invocation. A moment of silence was called for the members of the organization who had passed away since the last annual meeting. A memorial resolution for **O.D. Pinkerton MD** was read by **Russell Stodd MD** and adopted by unanimous consent.

Russell Stodd MD was appointed Parliamentarian and **Herbert K.W. Chinn MD** and **Sakae Uehara MD** were appointed sergeants-at-arms. The minutes of the 137th Annual Meeting were approved as published, and the special guests to the House were introduced.

Andy Don MD, President of the HMA, then introduced **Robert E. McAfee MD**, AMA President, who gave the presidential address.

Dr McAfee spoke of the current situation regarding health system reform. He said that the present system was unfriendly to some and had some problems with access to care. The care we provide is the best in the world. Coverage does not equate to availability of care, and no industrialized country in the world has solved the problem of cost of care. The program presented by President Clinton was too complex, and Congress has a hard time dealing with complex topics in an expeditious fashion. The AMA message of "Voice + Choice = Coverage" is still operational. We need help in the next year with four possible areas of legislative change: 1) There can be no more cuts in the physician reimbursement for care delivered to Medicare patients. There is an ever-increasing number of Medicare-aged patients in the United States, and this will continue to increase. 2) We have to see some movement in tort reform. Four of the six remaining bills on reform have a cap on pain and suffering. 3) Antitrust concerns are being discussed, but no action has taken place. We need prospective, well-designed antitrust permissive language. 4) The AMA Patient Protection Act, which Dr McAfee called "A Managed Care Protection Act," needs to be implemented. Any qualified physician must be allowed to apply to any plan, but the plan is not obligated to accept the physician. It is essentially a fairness act. Dr McAfee commended the *Hawaii Medical Journal* for two articles on family violence that appeared in the issue for Family Violence Awareness month.

Patricia Blanchette MD, Vice-Speaker, reviewed the modus operandi, nominating and election procedure. Voting hours were changed to 7 to 10:30 Sunday morning. She called on Secretary Lehman who appointed the following physicians as tellers: **Ernest Bade**, Hawaii; **Danelo Canete**, Honolulu; **Ronald Fujimoto**, Kauai; **Barry Shitamoto**, Maui; and **Theresa Smith**, West Hawaii. **Jeanette Chang MD**, Chair of the Nominating Committee, reported the slate of nominations for elective office and additional nominations were received from the floor. Reference Committee referrals and announcements of the appointment of each Reference Committee were made by Speaker Howard. At this time a recess of the House of Delegates was called until 11 Sunday morning and all delegates were encouraged to attend the reference committee hearings.

President Andy Don convened the HMA membership meeting at this point and following the completion of business adjourned the HMA membership meeting.

The Annual Meeting was reconvened on Sunday at 11 am. The results of the annual election were announced by **Speaker Blanchette** as follows:

President-elect	**Carl Lehman MD**
Secretary	**Roger Kimura MD**
AMA Delegate	**Russell Stodd MD**
Alternate AMA Delegate	**Allan Kunimoto MD**
Speaker of the House	**Leonard Howard MD**
Vice-Speaker	**Herbert K. W. Chinn MD**
Young Physicians Delegate	**Cynthia Goto MD**
Medical Student Delegate	**Anna Mateo**
Councilor from Maui	**Barry Shitamoto MD**
Councilors from Honolulu (5)	**Thomas Au MD**
	William Dang Jr, MD
	Paul DeMare MD
	Scott Hundahl MD
	Myron Shirasu MD

Dr Don announced that the **1995 Physician of the Year** award had been presented to **Reginald C.S. Ho MD** at the Presidential Inauguration banquet the night before. Dr Ho had been the first physician from Hawaii to serve as national American Cancer Society president, after having serving some 27 years as a volunteer both nationally and locally.

The remaining election Results may be obtained by calling Angela at the HMA.

The Reports of the Reference Committees were then received in order. Highlights of the reports, recommendations and resolutions follow:

1) The subscription to the *Hawaii Medical Journal* will be $18

for members and $25 for nonmembers.

2) The HMA will support the formation of a yearly seminar to be held at the HMA annual meeting called the **"George Hiilani Mills Native Hawaiian Health Care Seminar."** The format and content of this seminar can change from year to year depending on what is pertinent in Native Hawaiian health care.

3) The Long-Range Planning Committee was given several new tasks, among them to develop a confidential mechanism for resolving conflicts between physician members and support staff, to monitor accountability of all staff personnel and develop a reporting format to an appropriate body, and, further, to define the HMA's role in the VISION 2000 effort and report back to the next annual meeting.

4) The Finance Committee was referred the task of investigating the appropriateness of allocating 5% of the budget for a year-round political consultant to represent the HMA interests in the legislature while still allowing the Executive Committee to provide a balanced budget.

5) Resolution J, regarding actions of RICO and DCCA usurping the reponsibility of the Board of Medical examiners was referred to the HMA Executive Committee for consideration.

6) Resolution1, Harm Reduction, was referred to the Executive Committee to define "decriminalization" and give a report at the next Council meeting.



Above.—Eeee Haw! Not only does he wear the hat of Editor of the *Hawaii Medical Journal*, but sometimes that of a *paniolo*. The man-of-many-hats, Dr Norman Goldstein and his wife Ramsay enjoy an evening of country music and barbecue at Paniolo Night during the 1994 Hawaii Medical Association Annual Meeting.

7) Resolution 2, Council Representation for Large Groups, was referred to the Membership Benefits and Recruitment Committee for consideration.

8) Resolution C, Endorsement of Political Candidates, affirmed the policy that the HMA and its Council shall not endorse individual candidates for elective office.

9) Resolution D, Patents for Medical Surgical Procedures, puts the HMA on record as opposing the granting of patent protection for various medical and surgical therapeutic procedures. A related resolution, Resolution E, puts the HMA on record as opposing the inclusion of cataract "centers of excellence" in any government plan for medical reimbursement.

10) Resolution H was passed, which would amend the Bylaws of the HMA to add two additional members to the HMA Nominating Committee who shall be past presidents of the HMA.

11) Resolution 4 was passed, which would establish the minimum qualification of the state director of health as including an MD or DO degree with additional administrative and/or public health training or experience.

12) Resolution 5, regarding inappropriate use of DEA numbers, expressed concern about this issue, and directs HMA's AMA delegates to address the issue at that level.

13) Resolution 6, regarding Mandatory Bicycle/In-Line Skating Helmets, introduced by our new President, **Fred Holschuh MD**, encourages each physician to buy one helmet annually for collection and distribution by local police departments, and encourages the HMA to enlist the cooperation of the Hawaii State Bar Association and other pertinent organizations, and finally to work with the State Injury Prevention and Control Program to initiate legislation to enact strict bicycle and in-line skating helmet-use laws in Hawaii.

14) Resolution 14, supporting higher taxes on all tobacco products, suggests that the HMA recommend the tax on cigarettes be changed back to a percentage of the wholesale price as a means of accounting for inflation, and that the excess revenue generated from the increase in excise tax should be allocated for anti-smoking health education.

Many other resolutions were presented, debated, changed, amended and otherwise disposed of during the meeting. The complete report will be available in the Speakers Report to the House.

After completion of old and new business, Dr McAfee installed the newly elected officers of the association. Dr Don turned over the Presidential gavel to the 1994-95 President, **Frederick Holschuh MD.**

Dr Don was given a standing ovation in recognition of his hard work on behalf of the organization over the past year. The gavel sounded at 2:30 pm to adjourn the 138th annual meeting of the Hawaii Medical Association.

Len Howard MD
Reporter for the *HMJ*

Highlights of the 138th Annual Scientific Sessions October 7 to 9, 1994

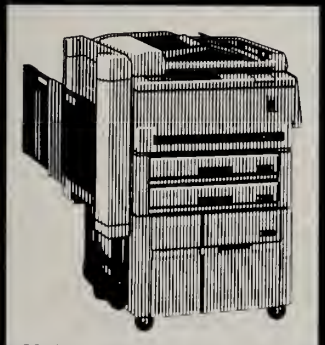
Women's health was the theme of this year's annual scientific sessions, and the first day's session provided an update of obstetrics and gynecology. Dr Daniel Mishell, from USC, discussed the advantages and risks of hormone replacement therapy during the menopause. The risk of death from all causes is lowered. Estrogen replacement alleviates the early physiological and psychological symptoms of menopause. Long-term use protects against osteoporosis, heart disease, and stroke. There is some evidence now that it may also reduce the incidence of Alzheimer's disease. There is no evidence that estrogen therapy increases the risk of breast cancer. The risk of endometiral cancer is increased, but the risk is reduced if progestin is also used. Dr Mishell's preference is to give estrogen and progestin 5 days per week throughout the month as this reduces breakthrough bleeding.

Dr James Navin spoke on screening for cervical cancer, giving the history of the development of the Papanicolaou smear and describing the ensuing controversies in the classification of cellular changes. Multiple terminologies resulted in confusion that continues today. The usefulness of the Pap smear report depends on the training and experience of the person who is screening the smears and also the quality of the smear that is submitted for screening. Dr Navin recommends the use of an endocervical brush.

Dr Mishell returned to discuss contraception. Currently in the U.S. more than half of pregnancies are unintended. There are 4 effective and reversible methods of contraception: Oral contraceptives, intrauterine devices, depo-medroxprogesterone injection (every 3 months, and implants of levonorgestrol that last for 5 years). Advantages, disadvantages, and costs of each method were presented. Further details are available in Dr Mishell's articles, "Contraception" in the September issue of the *Hawaii Medical Journal.*

The final speaker of the morning was Dr Thomas Kosasa who discussed the differential diagnosis and treatment of pelvic pain. The gynecological causes include ectopic pregnancy, incomplete abortion, endometriosis, and tubal and ovarian cysts. Nongynecologic causes are appendicitis, cystitis, renal stones, diverticulitis, and mesenteric adenitis. The important diagnostic approaches are: History and PE, CBC, ESR, serum hCG-B, cervical culture, urine culture, ultrasound, and laparoscopy. Most of the causes of pelvic pain can be treated with laparos-

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The topic for the second day was medical and surgical issues in women's health. Dr Randolph Wong discussed breast reconstruction surgery, including timing (whether it is done at the time of mastectomy or after initial healing has occurred), various techniques using the patient's own tissues or implants, and the pros and cons of each. He described the effect of ongoing cancer treatment on reconstruction decisions and the problems which reconstruction can create for future cancer detection. He emphasized that treatment of the cancer must be the first priority and that the patient must understand all of the options for treatment, with or without reconstruction, so that she can make informed decisions.

Dr Lois Mastrofrancesco discussed issues in breast cancer diagnosis and management. She described conflicts regarding when to start and how often to screen women for breast cancer and emphasized the importance of careful physical examination of the breast in conjunction with mammography. Issues surrounding the use of tamoxifen in the treatment of established breast cancer and in the possible prevention of breast cancer in women at high risk were described. Study of this is ongoing. Interestingly, although tamoxifen is an "anti-estrogen," it appears to have a protective effect against both cardiovascular disease and osteoporosis, just as estrogen does. She also described the controversy that erupted with the discovery of falsified clinical data in a study of breast-preserving treatment and led to questioning of the validity of the entire study. However, reanalysis of the data, with the falsified data excluded, produced the same result. Treatment of breast cancer involves control of the disease in the breast and control of systemic disease. Care of the breast cancer patient includes support through diagnostic, therapeutic, and rehabilitation or terminal phases of illness. This requires coordination of the efforts of the entire treatment team.

Cardiovascular disease in women was the topic for Dr Nora Goldschlager of the University of California, San Francisco. Coronary artery disease is the leading cause of death in women. Acute myocardial infarction is less commonly the initial presentation in women than in men; women are more likely to have angina first. Post-infarction morbidity and mortality rates are higher for women than for men. Women benefit less from thrombolytic treatment and have a lower 15-year survival rate with bypass surgery than men. Variant angina associated with vasospasm occurs in women with little or no CAD and generally has a good prognosis. "Syndrome X," consisting of chest pain, abnormal exercise tolerance but normal coronary arteries and no evidence of vasospasm, occurs in women. Chest pain may occur at rest only or during hyperventiliation. There is variable response to anti-ischemic therapy, and the long-term prognosis is good, even with persistent symptoms.

The final speaker on Saturday was Dr Betsy Love from the University of Iowa who talked about stroke. Stroke is the leading cause of disability in women and carries a higher mortality rate for women than for men. This is probably due to the older age of women at the time of stroke. Risk factors are generally the same for women as for men. Stroke can be prevented by controlling risk factors, and by the use of drugs (aspirin, warfarin, ticlopidine) and carotid endarterectomy. The indications for these were discussed.

Domestic Violence was the subject for the last day. Dr Susan Hayes-Schwartz started off with demographics. Domestic abuse occurs in all socioeconomic, ethnic, and cultural groups. Usually battered women see physicians many times before the abuse is ever reported because the abuse is missed by their physicians. Many women are physically abused during pregnancy, resulting in a higher incidence of miscarriages and birth defects. One-fourth to one-third of women who present to an ER are there because of abuse. Twenty percent of women in primary care practices are battered. In psychiatric practices, 25% to 50% of women making suicide attempts are victims of domestic abuse. There are many myths about who the victims are. They have no particular distinguishing characteristics; the main risk factor is gender.

Dr Shay Bintliff pointed out ways of identifying abuse victims. Every female patient should be assessed for abuse. She should be asked, "Are you safe at home? Is there any chance that someone is hurting you?" Every female patient should be undressed, as batterers often learn to hit where the bruises won't show. She should be interviewed alone, never in the presence of the potential perpetrator. She should be given information regarding services available for abuse victims, whether or not she admits to being abused. If there are indications that she has been abused, consider having her make the call for assistance before leaving the physcian's office. She should be told that the abuse *will* get worse—many battered women are ultimately murdered by the abusive spouse or boyfriend. However, the patient will have to make her own decision as to whether or when to seek help.

Vicki Wallach, Oahu Administrator of Child and Family Service, described the Healthy Start program which provides home-based family support services to families at risk for child abuse and neglect and which has become a model for other states. Initial services address the family's basic survival needs, for example, obtaining housing, providing infant formula or food for older children. Then the service providers try to improve the parents' child-caring skills by modeling desired behavior and providing information on child development. One-third of the families served have serious problems, such as mental illness, substance abuse, or domestic violence, which interfere with their progress. Multidisciplinary collaboration is required. Service plans are flexible and tailored to each family's needs. The results have been positive: Families who receive services have less child abuse, fewer ER visits, more children who are immunized, more medical homes, and more mothers who receive family planning services.

Pamela Ferguson-Bray, Director of the Commission on the Status of Women, spoke about the physician's responsibilities with regard to domestic violence. Reporting of child abuse and abuse of dependent adults is mandated by law. There must be an oral report by the physician as soon as abuse is suspected. This must be followe by a written report. Hawaii has no reporting statute for domestic violence. However, a physician who fails to identify a patient as a victim of battering, and fails to refer a patient who is subsequently killed by her domestic partner may be sued by the surviving children. Victims of suspected violence should be referred to programs specifically for them. Do not refer to a minister or family counselor. Injuries should be carefully documented because the severity of the crime with which the perpetrator will be charged depends on the level of injury. Assault statutes apply to physical injuries only, but the child abuse and dependent adult abuse laws also apply in cases of psychological harm, although this is more difficult to prove.

Elizabeth M. Adams MD
Reporter for the HMJ

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Radiofrequency Catheter Cure of Idiopathic Ventricular Tachycardia — First Experience in Hawaii

Edward N. Shen MD

Radiofrequency catheter ablation is a well-established technique in the therapy of many forms of supraventricular tachyarrhythmias. Its usage in ventricular arrhythmias is little known. This is a report of its first usage in Hawaii in the treatment of 2 specific forms of ventricular tachycardia in 5 patients without structural heart disease. A cure was achieved in 4 of the 5 patients.

Introduction

Therapy for ventricular tachycardia (VT) has traditionally been problematic. Drugs have low efficacy and a high side effect profile, including life-threatening proarrhythmia.[1-2] Device therapy is effective, but is at best suppressive with considerable cost and morbidity, and the long-term effectiveness still awaits better definition with randomized, controlled trials.[3-4] Surgery eliminates the arrhythmia circuit in selected patients, but incurs high cost, morbidity, and acute mortality (mean 12%).[5] Catheter ablation, pioneered by Professor Melvin Scheinman from University of California at San Francisco, is a major step forward in the treatment of arrhythmias,[6] promising cure with abbreviated hospitalization and lower cost. This technique initially employed direct current (DC) energy, and its usage was confined to supraventricular tachyarrhythmias. Hartzler, the renowned coronary angioplasty expert, was the first to report DC catheter ablation for VT.[7]

Unfortunately, this approach is plagued by several serious problems, including cardiac perforation and cardiogenic shock. In large part, these complications are due to the nature of the energy source—DC discharge is relatively *uncontrolled*, and the release of an electrical charge in blood causes electrolysis and gas formation, which in turn can lead to *barotrauma*. In comparison, catheter ablation with radiofrequency (RF) is more controlled and gives rise to discrete lesions with well-demarcated borders, without gas formation or destruction of the blood elements. Its usage in the past several years has already revolutionalized the therapy for supraventricular tachycardias (SVT).[8-10] The experience with this form of energy in VT ablation still is very limited.

The following report of a consecutive series of 5 patients demonstrates the usefulness of the technique in the elimination of 2 unusual forms of VT, both occuring in patients without overt structural heart disease. These 2 arrhythmias arise from the right ventricular outflow (RVOT) or from the basal left ventricle (LV), at the region of the posterior fascicle.

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Materials and Methods

To be eligible for the procedure, a patient must have significantly symptomatic arrhythmia which is also documented by ECG or Holter monitoring. To rule out organic heart disease as a cause for the VT, the patient would need to have a normal treadmill test and echocardiogram, or a normal cardiac catheterization. If the VT were of RV origin, an MRI scan would be performed to rule out arrhythmogenic RV dysplasia.

After informed consent is obtained, the patient would undergo a baseline electrophysiologic study. In most cases (4/5 patients), the ablative attempt was performed in the same procedure as the baseline study. Quadripolar electrode catheters were introduced percutaneously through sheaths inserted into the left or right femoral veins by the Seldinger technique. They were variably positioned across the tricuspid valve for His bundle recordings, in the high right atrium, and in the right ventricle, generally in the apex. On one occasion, a catheter was advanced into the coronary sinus to outline the mitral annulus. In the baseline study, VT induction was performed by RV overdrive pacing or by programmed stimulation using a basic drive train of 8 beats (at cycle lengths of 500 or 400 milliseconds) and with up to 3 ventricular extrastimuli. If programmed electrical stimulation (PES) was unsuccessful, an isoproterenol infusion would be given at 1 mcg to 4 mcg per minute, and PES repeated as necessary.

After the tachycardia was induced, a 12 lead ECG was obtained to define the tachycardia morphology (Fig 1). The ventricular nature of the tachycardia was demonstrated by either ventriculo-atrial dissociation or retrograde Hisian depolarization. Then endocardial activation mapping would be performed. In the case of the fascicular tachycardia, another quadripolar catheter would be introduced into the left ventricle through the

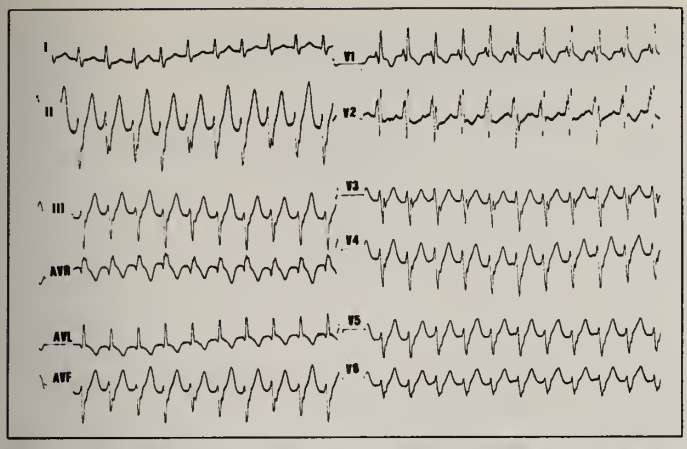


Fig 1.—Induced ventricular tachycardia from Case 1 (identical to clinical tachycardia) arising from basal inferior left ventricle. Note right bundle block configuration with superior axis.

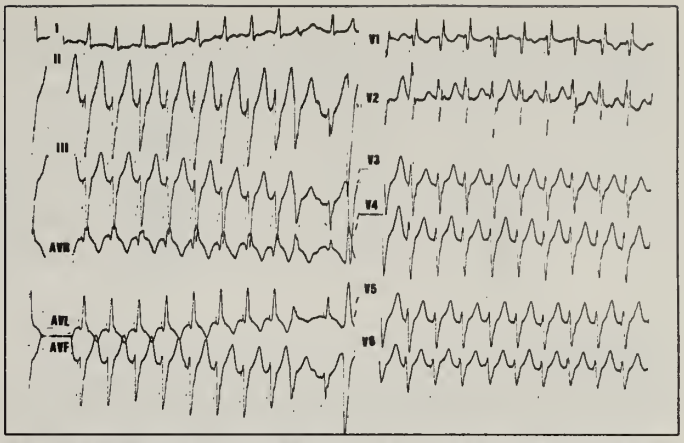


Fig 2.— Pace map produced by pacing from the tip of the ablation catheter in Case 1. Note 12 out of 12 ECG lead concordance with the tachycardia recorded in Fig 1.

aortic valve, via femoral arterial access. After the origin of the VT was approximately determined, the mapping catheter was substituted with the ablation catheter, which was also a quadripolar electrode catheter but with an enlarged deflectable 4 mm or 5 mm tip (Mansfield or EPT). This was advanced to the site of presumed VT focus (RVOT or basal LV).

Finer definition of tachycardia origin was performed by pace mapping—finding a site at which pacing with the ablation catheter tip could produce a QRS morphology which had 12 out of 12 lead ECG concordance with that of the induced tachycardia itself (Fig 2).

RF energy was then applied at the site defined by the best available pace map, generally employing 40 to 70 volts (15 to 50 watts) delivered from the large tip of the ablation catheter to a topical patch on the patient's back (Fig 3). Energy delivery would be halted immediately if the impedance measured should rise excessively, as this would suggest the formation of a coagulum (charred tissue-clot) which should be scraped off the catheter tip before further energy could be given. Each application of energy would last 30 to 60 seconds.

After each delivery, programmed stimulation was repeated. If tachycardia was not inducible, isoproterenol infusion and PES would be repeated and continued for a total duration of 30 minutes. The procedure was terminated if no single repetitive beat was inducible. All patients received intraveous heparin (3000 units at initiation and 1000 additional units every hour). Post procedure, the patient would be monitored for at least 24 hours. Cardiac enzymes and an echocardiogram would be obtained the next morning to rule out significant myocardial injury or structural damage. Procedural success is defined as noninducibility post ablation. Clinical success is defined as a complete absence of symptoms on follow-up and no arrhythmia documented by ambulatory monitioring.

Results

Five patients underwent the procedure, and their characteristics and procedural successes are listed in Table 1.

Two patients (Cases 1 and 5) had fascicular tachycardia, with the VT origin localized to the LV basal inferior septum. The morphology was right bundle branch block with superior axis



Fig 3.— Catheter positions in Case 1 (in 30 degree right anterior oblique projection). To facilitate a stable catheter position, the ablation catheter was coiled back from the apex. CS=coronary sinus/catheter (outlines the mitral annulus), RF=radiofrequency ablation catheter (with enlarged tip on the basal inferior septum of the left ventricle), RV=right ventricular catheter.

(Fig 1). In Case 1, tachycardia was easily inducible by atrial pacing. In the same case, HV interval was -15 milliseconds, consistent with retrograde Hisian depolarization from the left ventricle. In both cases, sustained tachycardia was easily inducible and the induced tachycardia was readily terminable with intraveous verapamil but not with adenosine. Procedural success was very easily attained with 2 RF applications in Case 1 and with only 1 in Case 5. Clinical success continued during follow up.

Three patients (Cases 2, 3, and 4) had RVOT tachycardia, and the VT focus was localized to the RVOT anteriorly, to sites just below the pulmonic valve. The morphology was left bundle branch block with inferior axis (Fig 4). Induction of tachycardia in all 3 cases required isoproterenol facilitation, and the VT induced tended to be nonsustained. Procedural success was quite easily achieved in Cases 2 and 4 and clinical success persisted in follow-up. In Case 3, procedural success was achieved in the first session after 8 applications. A lower-than-average amount of power (15 W) was used because of chest pain associated with each application. Unexpectedly, nonsustained VT recurred the same evening. The patient underwent a second ablative procedure the next day; however, despite vigorous attempts, not a single beat was inducible to serve as a template

TABLE 1.—Series of 5 consecutive patients without organic heart disease who underwent radiofrequency catheter ablation for ventricular tachycardia. The cases were arranged in chronological order. Case 1 was ablated on June 3, 1992.

Case No	Age/Sex	Symptoms	Tachycardia Morphology	Rate	Drugs Tried	No RF (Energy)	Success/ Follow-up
1	28/M	p, sob, cp	RBBB, sup	210	P,V	2 (37 W)	+ 29 m
2	56/M	d	LBBB, inf	250		7 (50 W)	+ 20 m
3	28/F	p, cp, d, s	LBBB, inf	250		14 (15 W)	- 16 m
4	55/M	d, f	LBBB, inf	230		1 (36 W)	+ 7 m
5	15/M	p, cp, d	RBBB, sup	170		1 (36 W)	+ 7 m

Abbreviations
(cp=chest pain, d=dizziness, F=female, f=fatigue, inf=inferior axis, LBBB=left bundle branch block, M=male, m=months, P=propanolol, Pt=patient, Rate=beats per minute, RBBB=right bundle branch block, RF=radiofrequency applications, s=syncope, sob=shortness of breath, sup=superior axis, V=verapamil).

for repeat ablation. Nonetheless, 6 RF applications were given "blindly" at the same radiological location recalled from the prior study. Afterward, the patient had uniform ventricular ectopy without runs. She was briefly treated with sotalol, then she continued without antiarrhythmic therapy and was essentially symptom-free on follow-up.

In all cases, there was a mild rise in MB CK but the total CK remained in the normal range, consistent with a small amount of myocardial injury. The echocardiograms were all normal, showing no wall motion abnormality, pericardial effusion or valvular abnormality. There were no complications.

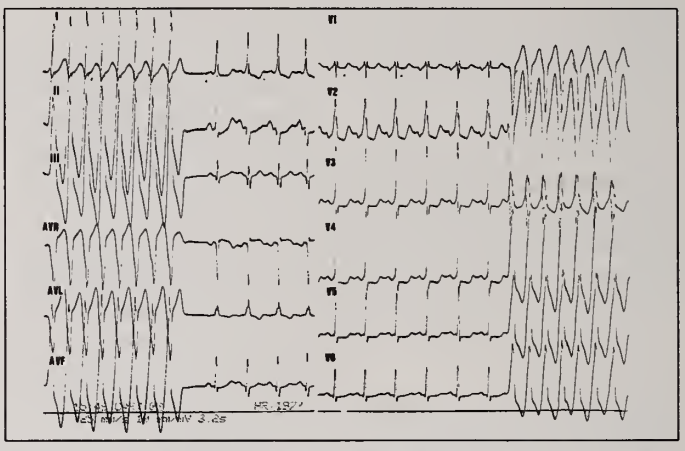


Fig 4.—Ventricular tachycardia from Case 2 arising from right ventricular outflow tract. Note left bundle branch block configuration with inferior axis.

Discussion

Tachycardia Mechanism and Clinical Features.—Fascicular tachycardia is rare. First described in 1984 by Belhassen,[11] its location in the left posterior fascicle or left posterior inferior septum is suggested by the morphology of the tachycardia, the range of HV intervals (+15 to –20 milliseconds, consistent with retrograde depolarization of the His bundle from the ventricle) and, as in our cases, by endocardial activation mapping and pace mapping. Typically, such a patient does not have organic heart disease,[12] in clear distinction from the majority of VT patients who have scarred ventricles from prior myocardial infarction or cardiomyopathies to serve as substrate.

Tachycardia mechanism has not been clearly defined. The location in or close to the conduction system may explain why there is such a high prevalence of induction by atrial stimulation (versus most other VTs that are inducible only through the ventricles). This may be possible simply because of geometric proximity. The induction by PES would argue against abnormal automaticity and favor reentry, whereas the very high supressibility by verapamil has suggested a role by afterdepolarizations. Indeed, there has been 1 case of fascicular tachycardia reported with digoxin toxicity in which the tachycardia exhibited certain characteristics that supported triggered activity.[13] The latest evidence favors reentry. This tachycardia has been shown to entrain with constant fusion, and also with progressive fusion at shorter pacing cycle lengths.[14] Addition of verapamil has prolonged the conduction delay during entrainment. Thus reentry with some zone of calcium current dependent slow conduction is a very feasible unifying hypothesis. There is some recent evidence to suggest that the tachycardia arises from the Purkinje network itself.

RVOT tachycardia is probably not as rare as fascicular tachycardia. It was described as early as 1922 by Gallavardin,[15] was named in 1947 by Parkinson and Papp as repetitive paroxysmal tachycardia,[16] and more recently as repetitive monomorphic ventricular tachycardia.[17-19] A typical patient also does not have organic heart disease. This tachycardia generally presents as frequent nonsustained salvos of wide complex tachycardia, frequently with minimal symptoms. In 20% of cases, the tachycardia was sustained (>30 seconds).[20] What distinguishes this tachycardia from the rest is its easy precipitation by stress or exercise. It is not readily provokable by PES and frequently requires isoproterenol for induction, as in our cases. The mechanism is probably abnormal automaticity but triggered activity also has been suggested in view of its response to intraveous adenosine (which antagonizes catecholamine-induced stimulation of cyclic-AMP, believed to have a role in calcium overload-mediated delayed afterdepolarizations and triggering). There is an exceptionally high response to beta-adrenergic blockers, though type 1 antiarrhythmic agents and verapamil also work well should drug therapy be desired.

The prognosis of patients who have these 2 forms of VT is unclear, as both tachycardias are relatively uncommon and there are no long-term follow-up studies. There has been 1 report[21] of a young patient with persistent fascicular tachycardia who

developed a dilated cardiomyopathy and suffered an embolic cerebral transient ischemic attack. The cardiac enlargement reverted following successful treatment with verapamil. Thus, it is probably not benign, though unlikely to be as malignant as the typical VT found in an older patient with prior myocardial infarctions. RVOT tachycardias have a benign prognosis in terms of mortality, with no deaths or worsening of symptoms with follow-up of 6 months to 8 years in 1 series.[18]

Efficacy of Pace Mapping and RF Catheter Ablation in VT without Organic Heart Disease.—The lesion caused by an RF application is quite shallow. Its efficacy in fascicular and RVOT tachycardia suggests that the tachycardia focus or the vulnerable portion in the reentrant circuit is at or very close to the endocardium. The zone also is probably quite small, thus allowing for 1 well-placed lesion to annihilate the tachycardia. The lack of scarring in an otherwise normal ventricle would ensure less *distortion* and enable activation mapping or pace mapping to localize the focus more accurately. In our cases, a 12 out of 12 lead concordant pace map virtually guaranteed success (the lone failure in Case 3 might be due to insufficient power employed). By comparison, the circuit in post-infarction or cardiomyopathy-related VT is frequently fairly large and may take various configurations and run very deep subendocardially, thus theoretically more difficult to map and ablate by RF. It stands to reason why ablation for ischemic type VT is far less efficacious, even in the most experienced centers.[22]

Comparison with other Catheter Interventional Techniques.—Percutaneous transluminal coronary angioplasty (PTCA) has been widely embraced as a standard of therapy for obstructive coronary artery disease, even though it is, in most cases, a palliative procedure with significant complications including death (.5% to 1%), abrupt vessel closure and infarction (3% to 5%), and other problems such as stroke, renal dysfunction with iodinated contrast load, and vascular damage. This is especially remarkable in the face of a recurrence rate of 25% to 60% at 6 months, with the known fact that there is no difference in prognosis between medical and surgical (likewise PTCA) therapy for 1 or 2-vessel disease—by far the majority of cases undergoing the procedure. RF catheter ablation (for VT and SVT) by comparison is far superior, mainly because it is curative with a much lower complication rate (only 1 myocardial infarction and 1 death reported in the world literature[10,23]) and at a far lower cost (acutely, no surgeon or operating room standby; chronically, no medications, no emergency room visits, no repeat procedures). The more than 90% success rate could be obtained at one-fourth the cost of arrhythmia surgery, with a markedly lower morbidity and virtually no mortality.

Implications for Diagnosis and Treatment.—It is quite natural for a physician to assume that a wide complex tachycardia in a young person is supraventricular in origin, especially if there is no evidence of organic heart disease and the tachycardia responds well to intraveous verapamil or adenosine. It behooves the treating physician to be more vigilant for signs suggestive of VT. VA dissociation, if discernable from the 12 lead ECG, is a most valuable clue, whereas other signs such as absence of RS complexes in the precordial leads, QRS concordance, QRS width, etc, while more valuable for the conventional forms of VT[24] are not helpful in diagnosing these 2 specific types. A reasonable index of suspicion should be aroused with any tachycardia having an RBBB/superior axis or an LBBB/inferior axis (especially if the latter should be exercise-induced). Ultimately, electrophysiologic testing may be the only reliable means of elucidation. Precisely defining the mechanism is important because for both of these forms of VT, RF catheter ablation might offer definitive therapy.

Conclusion

Currently, with cure so readily attainable with the RF ablative technique, empiric drug therapy is no longer the standard of care in most young patients with symptomatic SVT. Our cases demonstrate that there are 2 unusual forms of VT that also are amenable to catheter eradication. When confronted with a wide, complex tachycardia in a young person without organic heart disease, a healthy index of suspicion and a willingness to look more closely may frequently work to the benefit of the patient.

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Characteristics of Veterans in Hawaii with and without Diagnoses of Post-Traumatic Stress Disorder

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A total of 118 combat veterans seeking services at the VA Medical Center in Honolulu were assessed on a variety of demographic and psychometric dimensions, permitting the first systematic comparison on the measured variables between veterans with and without PTSD in the multicultural population of veterans in Hawaii. The results have implications for medical interventions with this population.

Introduction

Post-traumatic stress disorder (PTSD) is an anxiety disorder arising from the experience of a significant distressing event—such as a serious threat to one's life—and characterized by 3 major classes of symptoms in the *Diagnostic and Statistical Manual*: (1) Cognitive, in the form of persistent reexperiencing of the event (eg, in dreams or flashbacks); (2) behavioral, in the form of persistent avoidance of stimuli associated with the event (eg, avoidance of thoughts or feelings associated with the trauma or emotional detachment); and (3) physiological, in the form of persistent arousal (eg, disordered sleep or heightened physiological reactivity).[1]

The seriousness of PTSD as a disorder among war veterans is mainly evidenced by the results of the Vietnam campaign. Of approximately 3.5 million Vietnam veterans in the U.S., epidemiological studies in 1988 found that about 15%, or perhaps one-half million, satisfy the diagnostic criteria for PTSD.[2] Approximately 30% of all combat veterans continue to have difficulties of some kind in social adjustment. For veterans with high exposure to combat, PTSD symptoms can occur in more than 38%. Using the above percentages, in Hawaii in a population of approximately 25,000 Vietnam veterans more than 3,500 would be expected to suffer from PTSD.

From the standpoint of health care, combat-related PTSD is an expensive and demanding problem. It is estimated that 26% of all mental health outpatient visits and 19% of all inpatient discharges from Veterans Administration (VA) medical centers across the U.S. are owed to PTSD sufferers. These data suggest that substantial PTSD-related distress is expressed in visits to medical practitioners. It is, therefore, important for physicians to be aware of the characteristics of patients who have been recognized to have symptoms of PTSD.

Hawaii's multiethnic population provides a unique opportunity for the study of PTSD and its treatment cross-culturally. A disproportionate impact of combat stress and/or cultural readjustment in minority groups is suggested by studies of PTSD nationally, which have found the prevalence rate among African Americans to be 1.5 times and among Hispanics to be 2.0 times greater than among Caucasians.[2] Unfortunately, such statistics on the numbers of individuals in ethnic groups concentrated in Hawaii, most notably Asian Americans or Pacific Islanders who were in the Armed Forces in Vietnam, are not available. However, estimates by Roger Hamada PhD to the U.S. Senate Committee on Veterans Affairs (unpublished data, 1990) based on a probability sample suggest that the 2 groups combined may be as large as 34,600 individuals nationally. As also pointed out by this observer, there are reasons to believe that the characteristics of war-time stressors for the ethnic groups unique to Hawaii may have been similarly exaggerated owing to culture-specific factors.

Clinical investigations of PTSD have been focused on both assessment and treatment, with greater effort in the former area. In recent studies, a multimodal approach to assessment has been advocated in efforts to improve the accuracy of diagnoses.[3-5] Prior research of this kind enables the use of a wide variety of psychometric instruments with documented reliability and validity for the assessment of PTSD with a high degree of confidence.[6] These efforts provided a rationale for the first systematic study of symptoms characteristic of PTSD in a sample of the population of veterans in Hawaii, including a variety of demo-

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graphic features. These data are presented in an effort to enhance understanding of the nature, severity, and predictors of this serious disorder among combat survivors in this community, paving the way for more effective assessment and treatment.

Method

Subjects.—The subjects were 118 combat veterans who sought services at the Honolulu Veterans Administration (VA) Medical Center during the period January 1989 to August 1993 from the PTSD Clinical Team patient pool and the Stress Disorders Laboratory research subject pool. Subjects were further selected in terms of completion of the minimal set of psychometric instruments discussed below to meet criteria for analyses. All subjects signed an informed consent form approved by the VA Human Subjects Committee. The mean age of these veterans was 46, ranging from 27 to 73 years of age. Overall (of those who responded to the item), 80% of the veterans reported their residence to be on Oahu, 14% on Hawaii, and the remainder on other islands.

Measures.—Completion of the following questionnaires were minimally required for inclusion in the analyses, details of which will be described below: (1) A demographics questionnaire; (2) the Initial Screening Questionnaire (ISQ); (3) the Minnesota Multiphasic Personality Inventory versions 1 or 2; and (4) the Mississippi Scale for Combat-related PTSD.[7] The patients from the PTSD Clinical Team pool had completed an inconsistent variety of other diagnostic instruments ordered by a number of treating clinicians over several years, rendering use of additional data on these veterans beyond the scope of the current analyses. Only comparable data from the Stress Disorders Laboratory subjects were analyzed in order to equate the 2 data sets.

The demographics questionnaire is a 20-item self-report questionnaire utilizing, wherever possible, a check-list format for eliciting a wide variety of information regarding personal, military, and family status of veterans. The surveyed areas of primary interest in this analysis were: Age, island of residence, employment status, number of years residing in Hawaii, ethnicity, marital status, number of children, branch of service, rank, combat theater, service-connected disability, treatment facility utilized, recent hospitalization, and type of current problem(s).

The Initial Screening Questionnaire is a 40-item, 6-point Likert-type scale for frequency or PTSD symptoms developed by Nathan Denny for use by the PTSD Clinical Team at the Honolulu VA Medical Center. The internal consistency of the scale obtained with the current sample of subjects is high (coefficient alpha = .92). A factor analysis of the scale prior to the analyses in this report yielded 3 principal components, approximately interpretable as follows: Factor ISQ1—intrusiveness of memories/hypervigilance; Factor ISQ2—social maladjustment; Factor ISQ3—anger/avoidance. Subsequent analyses incorporated only items within each factor that correlated .45 or more with the variable: ISQ1, 17 items; ISQ2, 9 items; ISQ3, 7 items.

Both the original MMPI and the more recent MMPI-2 were used in the assessment of the subjects owing to the period during which the subjects were assessed—the MMPI-2 was adopted for use in these patient populations in 1992. Extensive discussions of the reliability and validity characteristics of these scales may be found in the administration manuals accompanying these instruments.[8]

The Mississippi Scale for Combat-Related PTSD is a 35-item self-report scale using 5-point Likert-type items that samples the symptoms of PTSD outlined in DSM-IV plus certain associated features. The higher the score, the more likely the diagnosis of PTSD. Three initial studies confirmed high internal consistency of the scale (coefficient alpha = .94), high one-week test-retest reliability (Pearson r = .97), and, in differentiating between patients with and without PTSD, a sensitivity of .93 (proportion of PTSD subjects identified), specificity of .89 (proportion of nonPTSD subjects identified), and overall efficiency (hit rate) of .90, demonstrating high diagnostic accuracy.[7]

Results

In accordance with their scores on the Mississippi Scale for Combat-Related PTSD, the subjects were assigned to 2 groups, PTSD and nonPTSD. Scores on this instrument were employed for group classification since they provided a clear, objective basis for assignment with a strong empirical rationale. In previous validation studies, a cutoff score of 107 was shown to maximize classification accuracy for presence of the disorder.[7] In this sample, a slightly more conservative score of 109 was selected because this value was at a natural break in the obtained distribution of scores. Thus, there was no overlap in the distributions of Mississippi Scale scores for veterans in the PTSD and nonPTSD groups. This method for group assignment yielded an N of 85 for the PTSD group and 33 for the nonPTSD group. The results of additional scales, outlined below served to validate this selection criterion.

The significance level of all inferential statistical tests reported below was set at .05. Where appropriate, the tests employed included analyses of variance (ANOVAs), t-tests, and chi-squares.

The principal demographic characteristics of the distributions of veterans with and without PTSD are shown in Tables 1 and 2 along with related statistics and probabilities. The veterans' theater of combat was predominantly Vietnam for both groups. The mean age of the veterans with PTSD (44.8) was significantly lower than that of those without the disorder (48.3)—thus, in 1970, at approximately the midpoint of the Vietnam

Table 1.—Demographics: Means and Standard Deviations of Characteristics of PTSD and nonPTSD Veterans

	PTSD (N = 85)		NonPTSD (N = 33)			
	M	SD	M	SD	t / p	df
Age	44.8	5.6	48.3	9.6	2.50 / .0138	116
Years in Hawaii	22.5	17.4	25.4	18.6	.59 / .5566	55
No of Children	2.0	1.6	2.2	1.9	.43 / .6679	105

Note.—Differences between df and N reflect nonresponding on the related demographics questionnaire item.

conflict, the PTSD veterans were 21.8 years of age; the nonPTSD veterans were 25.3. Also, the PTSD group was significantly more likely to have been recently hospitalized for a psychiatric disorder (37% versus 9%) to self report their disability as PTSD (29% versus 9%) and, marginally significantly, to be unemployed (68% versus 48%). Although the PTSD veterans were more likely to report being unmarried, to have a service-connected disability, and a substance abuse problem, on these dimensions the 2 groups did not differ significantly, perhaps owing either to the sample size or to the relatively conservative chi-square statistical test necessarily employed.

In addition, Table 2 shows an apparent lower representation of Asian-Americans and a higher representation of Hawaiians and part Hawaiians in the PTSD sample relative to the nonPTSD sample, although this difference was statistically nonsignificant. However, in follow-up analyses comparing these data with the distributions of these ethnic groups in Hawaii (Asian-American, 39.2%, Hawaiian/Pacific Islander, 17.6%, Caucasian, 27.0%), it was found that this pattern of ethnic representation for the PTSD subjects was significantly different (χ^2 = 13.91, $p < .001$, df = 2). It was also found that the apparent pattern of underrepresentation of Hawaiians and overrepresentation of Caucasians in the group without PTSD (Table 2) was significant ($\chi^2 = 7.80$, $p < .025$, df = 2). In short, while Caucasians appeared to be overrepresented in both groups of veterans, Hawaiians appeared to be differentially overrepresented and Asian-Americans differentially underrepresented in the group with PTSD relative to the group without PTSD, by comparison with the population of the state at large.

Not shown in the tables, in response to an item in the demographics questionnaire that asked the subjects to indicate significant "problems" they were currently experiencing in their lives, the veterans with PTSD reported significantly more problems (mean = 5.5 out of a possible 8) than those without PTSD (mean = 4.2) (t = 3.17, p = .002, df = 96).

Measures of considerable interest were also derived from the psychometric instruments, the Mississippi Scale, the MMPI, and the ISQ, which are shown in Table 3 along with related statistics.

Five measures of PTSD provided strong cross-validation for the use of the criterion test, the Mississippi scale. On the latter, the table shows that a large separation of the means for the PTSD and nonPTSD group resulted from using the 109 cutoff score. On the Initial Screening Questionnaire, the PTSD subjects also differed significantly in terms of a higher level on all 3 factors related to the disorder—ISQ1, intrusiveness of memories/hypervigilance, ISQ2, social maladjustment, and ISQ3, anger/avoidance. On the more standardized instrument, the MMPI, it is also notable that the veterans classified with PTSD on the Mississippi also had significantly higher scores on the Keane PTSD scale, as well as on the profile of subscales identified with the disorder by other investigators, namely, F ("over reporting" of symptoms), depression, and schizophrenia. This F, 8, 2 configuration was previously identified with PTSD by Keane et al,[10] and replicated by Blanchard et al.[11] Other findings of interest on the MMPI were significant elevations on scales 3, 4, 6, 7, 10, and the anxiety scale, showing a severe and general pattern of psychiatric disturbance and social withdrawal in these veterans.

Finally, individual analyses of possible differences among the 3 ethnic groups with PTSD—Asian-Americans, Hawaiians, and Caucasions—failed to yield statistically significant differences on all but one of the above dimensions, probably owing to the small sample sizes when the PTSD group was subdivided with respect to ethnicity. However, on the Mississippi scale, the ethnicity factor was significant (F = 3.16, p = .0495, df = 2/61). Apparently, this effect was produced by a lower mean score in the Asian-American group (121.2) relative to the other 2 groups, (Hawaiian, 133.0; Caucasian, 132.3).

Table 2.—Demographics: Frequencies and Percents of the Distributions of PTSD and nonPTSD Veterans

		PTSD (N = 85)		NonPTSD (N = 33)		
		f	%	f	%	χ^2 / p
Employed	No	50	68.5	13	48.1	3.50/ .061
	Yes	23	31.5	14	51.9	
Ethnicity	Asian Am	11	17.2	8	32.0	4.79 / .091
	Hawaiian	17	26.6	2	8.0	
	White	36	56.2	15	60.0	
Family status	Married	28	34.6	14	45.2	1.07 / .300
	Unmarried	53	65.4	17	54.8	
Combat theater	Vietnam	69	90.8	23	82.4	1.50 / .221
	Other	7	09.2	5	17.9	
Service-connected disability	Yes	60	73.2	22	68.8	0.22 / .637
	No	22	26.8	10	31.2	
Type of disability	PTSD	25	29.4	3	9.1	5.42 / .020
	Other	60	70.6	30	90.9	
Recently hospitalized	Yes	31	36.9	3	9.1	8.89 / .003
	No	53	63.1	30	90.9	
Substance abuse problem	Yes	21	50.0	7	30.4	2.32 / .128
	No	21	50.0	16	69.6	

Note.—Differences between total frequencies and N reflect other small categories of membership (eg, other ethnicities) or nonresponders, which were not included in the statistical analyses.

Summary and Conclusions

In summary, the typical Hawaii veteran seeking services at the Veterans Administration Medical Center and with a diagnosis of PTSD on a standardized instrument (the Mississippi Scale for Combat-related PTSD) is male, Caucasian or Hawaiian (in lesser numbers, Asian-American), a veteran of combat in Vietnam, younger than a veteran without PTSD, a resident of Oahu for more than 20 years, unemployed, unmarried, has a service-connected disability, and has a relatively high reported incidence of recent hospitalization for psychiatric disorders. He also is likely to report a substance abuse problem, and he reports a number of significant difficulties from a list of 8 possible problem areas. On many of these variables, the differences between veterans with and without PTSD were statistically significant in this comparison.

In addition, the average veteran in Hawaii diagnosed with PTSD on one scale (the Mississippi) also manifests significant

Table 3.—Psychometrics: Means and Standard Deviations of the Measures on PTSD and nonPTSD Veterans

	PTSD (N = 85)		NonPTSD (N = 33)		
	M	SD	M	SD	t / p
Mississippi	130.6	13.7	90.8	13.1	na*
ISQ F1	67.6	18.4	41.2	12.9	8.84 / .0001
ISQ F2	38.4	7.4	28.0	6.9	6.95 / .0000
ISQ F3	23.6	6.8	15.8	5.6	5.81 / .0000
MMPI Valid. (T-Scores)					
L	50.4	9.1	49.8	9.0	.22 / .8189
F	85.4	17.0	68.2	12.3	4.07 / .0001
K	40.1	7.3	45.8	10.4	2.23 / .0345
MMPI Clin. (T-Scores)					
HY (1)	75.0	15.5	65.2	17.0	2.33 / .0228
D (2)	86.4	15.8	68.4	15.8	4.32 / .0001
HS (3)	71.8	11.8	63.8	15.6	2.36 / .0212
PD (4)	76.7	11.5	68.5	14.4	2.52 / .0139
MF (5)	61.8	13.4	55.9	10.5	1.76 / .0823
PA (6)	81.2	15.4	65.9	13.0	3.92 / .0002
PT (7)	84.0	15.0	66.4	11.1	4.71 / .0000
SC (8)	87.5	18.3	73.6	12.0	3.66 / .0006
MA (9)	67.5	14.8	63.0	11.0	1.24 / .2202
SI (10)	67.5	12.1	53.9	11.6	4.29 / .0001
Anxiety (A)	80.4	11.5	67.7	11.0	2.52 / .0192
PTSD (PK)	75.2	17.0	61.6	16.9	3.05 / .0032

*Note.—A statistical test on the means from the Mississippi Scale was not necessary because the subjects had been assigned to groups on this variable and the 2 distributions of scores were nonoverlapping.

levels of maladjustment on other instruments designed to assess the cognitive, behavioral, and somatic DSM-IV criteria for this disorder, demonstrating both construct and criterion validity. Moreover, the Hawaii veteran with this diagnosis shows significant levels of psychopathology on a majority of the clinical dimensions represented on the MMPI, in this respect resembling patterns typical of veterans assessed in studies of Mainland populations.[6] Relatedly, significant elevations on the anxiety subscale of the MMPI confirms elevations on this measures by other investigators.[6,11] On the clinical scales of the MMPI, the only differences that were not statistically significant between PTSD and nonPTSD subjects in the analyses also are not of particular interest in assessing the disorder, namely, the masculinity-femininity scale and the hypomania scale. Thus, overall, PTSD among Hawaii's veterans as assessed with these instruments is an extremely serious disorder with multiple ramifications for personal distress, medical difficulties, and social maladjustment, to name a few areas of major concern.

One of the findings of interest was the age difference between the veterans presenting with PTSD: Nearly 4 years younger than the veterans without the disorder. This result also parallels national statistics. For instance, in a national study cited earlier, it was found that rates of PTSD were significantly higher (18% to 19%) in veterans of the Vietnam conflict who were born after 1945 than in those born prior to 1945 (4% to 10%).[2] The mechanism for this difference may be complex, but at least some theorists have attributed the effect to the incompleteness of the developmental process in the young veteran, with possible disruption during exposure to the traumas of combat.[12]

Overall, these data are the first to statistically demonstrate the severity and pervasiveness of the symptoms of PTSD in the typical Hawaii veteran assessed with this disorder. The similarity between this population and others studied among Mainland veterans demonstrates both the appropriateness of standardized diagnostic tools for clinicians working with these patients and the relatively low impact of cultural variables for prediction of the disorder in this setting. Further support for the tentative notion that cultural variables may not be of great importance at this level of assessment of combat-related PTSD in the Hawaii population were the large numbers of statistical tests that were conducted across both the demographic and psychometric measures, all but one of which (the Mississippi Scale) were nonsignificant between ethnic groups. A difficulty with this interpretation, of course, is that the numbers of veterans represented in the ethnic categories examined, Asian-American, Hawaiian, and Caucasian, were relatively small.

There is some suggestion in the analyses, however, that the distributions of major ethnic groups among this veteran sample may be different from representations of the groups in the state. In analyses comparing distributions of these groups in the sample to the population of Hawaii at large, among veterans with PTSD Asian-Americans were underrepresented and Caucasians and Hawaiians (including part Hawaiians) were overrepresented. It is very difficult to assess the meaning or significance of these data from the standpoint of the relative impact of combat on PTSD in these respective groups since, as indicated earlier, there are no data to show the relative distributions of these groups from Hawaii among veterans of Vietnam generally. It is also impossible with our data to determine whether these differences are due to differential patterns affecting contact with the VA Medical Center or to differential risk for PTSD. The data are suggestive, however, of the potential need for culturally sensitive therapists and treatment protocols given the relatively large numbers of Hawaiians in this sample.

This study is an important first step in the systematic assessment of PTSD in Hawaii's veterans. The identification of sensitive psychometric instruments, specific patterns of symptomatology, and relevant demographic features are all essential in the effective delivery of health services—including general medical and psychiatric, psychological, nursing, and other services—for the large and seriously affected group of PTSD sufferers in this population.

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Radiofrequency Catheter Cure of Idiopathic Ventricular Tachycardia—First Experience in Hawaii

➤ *(Continued from Page 313)*

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Busy OBGYN practice for sale at Kapiolani Medical Center; private office; 3 well-equipped exam rooms; inquiries to H. Jeni Lee 524-1800 or Fax 524-4591.

News and Notes Henry Yokoyama MD

Personal Notes

Big Island surgeon **Larry Peebles** appeared in a pair of concerts at the Aloha theater as his harmonica playing alter ego Dr L.A.

Retired **Harold Sexton** is one of six Punahou Alumni inducted into the Punahou "O" Men's Athletic Hall of Fame. Harold, class of '33, has won world stature in master's swimming competition.

Hors de Combat

No fault auto insurance no more.—For those of us who have wondered, Winona Rubin, DSSH director explained that "the original intent of providing no fault auto insurance to those on Medicaid was to enable them to get to their medical care. Under Health QUEST, the participating health plans will provide transportation, so it's no longer necessary to provide no-fault insurance for some 4,000 households." House Bill Number 3427 (Act 225) was signed by Gov Waihee.

Elected, Honored and Appointed

John Corboy of Wahiawa was named a Melvin Jones Fellow by the Lions Club International Foundation in recognition of his commitment to serving the world community.

Reginald C.S. Ho was appointed to the board of the Blood Bank of Hawaii.

Urologist **John Edwards** who joined The Queen's Medical Center as VP, medical staff services in 1993 was appointed VP, physician relations. John will be coordinating information between the administration and the 1,000 active and courtesy staff physicians at Queens.

Physician Moves

June.—**Kenneth Ing** announced his retirement as of June 30.

July.— Former Hilo Medical Group surgeons **Gerald Lau** and **Timothy Oldfather** moved to 1292 Waianuenue Ave, 2nd floor. Perinatalogist and OB/Gyn **Dottie Watson** opened at Kapiolani Medical Center, Ste 515 with **Lyn Lam**.

August.—Pediatric neurologist **Gregory K. Yim** opened at KMCWC, Ste 1000, and at Windward Pediatrics, 45-710 Kam Hwy, Kaneohe.

Adult and child neurologist **Ronald Yamaoka** opened his office at Kailua Professional Center, 30 Aulike Street, Ste 601, Kailua.

OB/Gyn **Patrick K.H. Alu**, who put his practice on hold while devoting himself to the Polynesian Voyaging Society, has joined the Wilcox Medical Clinic's Kukui Grove Clinic. Pat was the physician onboard the *Hokule'a*.

Conference Notes

"Evaluation of Memory Problems and Rx Alzheimer's Disease" lecture by Michael Mega, UCLA neurologist. Sponsored by Parke Davis, April 11, 1994.

Dementia (Syndrome including 3 of the following symptoms)
- Memory loss
- Language loss
- Visio/spatial skills loss
- Personality/mood changes
- Cognition loss

Age-Associated Memory Impairment
- Names
- Inconsistent
- Not incapacitating
- Awareness intact
- Learning intact
- No other abnormalities

Memory Dysfunction
- Retrieval defect
- Anomia (inability to learn new information)

Ddx Alzheimer's vs Frontal Lobe Degeneration
- Probable AD
 - Onset 40 to 90
 - Progressive more than 6 months
 - Memory intact
 - No delusions
 - No alternate dx
- Alzheimer's Disease
 - Intact attention
 - Poor memory
 - Anomia
 - Impaired consistency
 - Poor calculation and abstractions

(Normal digit span = 7; 15 word test; wordless generation; 1 minute test, eg, name animals in 1 minute; (high-school level names 15 animals; typical AD names 5 to 8 animals)
 - Cognitive problems
 - Neuropsychiatric changes (indifference; anxiety; delusions; agitation, depression)
- A.D. Stages: I = Mild changes, subtle
 II = Distinctive pattern
 III = Global (Treatment useless in Stage III)
- Pathology in A.D.
 Neurofibrillary tangles; amyloid over 16; amyloid angiopathy
- Cognitive Defect
 - CT scan: ro subdural, glioma, etc
 - Spect Scan: Measure cerebral blood flow In AD, decreased blood flow in both temporo-parietal regions

Ddx AD versus frontal lobe degeneration
- Frontal Lobe Degeneration
 - Disinhibition
 - Poor judgment
 - Aphasia
 - Intact early memory
 - Intact early visual-spatial skills
 - Intact early calculations
- Sub-cortical dementia
 - Slow cognition
 - Poor recall
 - Good recognition
 - Executive dysfunction
 - Depression/apathy
 - Intact language skills
- Vascular Dementia
 - Abrupt onset
 - Hx TIAs, etc
- Dementia of Depression
 - Past history
 - Family history
 - Recovery with antidepression therapy

***Antidepression therapy (Do not use tricyclics, eg, Elavil in elderly, instead use SSRIs in elderly, eg, Prozac, Zoloft, Paxil).
- Chronic Confusional States
 - Normal Pressure Hydrocephalus (CT scan shows dilated ventricles)
 - Alcohol-related dementia:
 chronic alcohol use
 memory loss
 executive dysfunction
 constitutional disturbance
 intact language
 more than 4 drinks/day
 - Drug-induced Dementia:
 antihypertensives
 anticholinergics
 anticonvulsants
 sedatives/hypnotics

***Stay away from chronic use of benzodiazepines

Evaluation: Alzheimer's Disease (AD)
- History; NE; PE
- Mental status evaluation
- Lab tests
- Neuro-imaging

Lab Tests
- CBC, ER
- Lytes, BC
- BUN, Ca, P
- Liver functions
- TSH
- Folate

Cholangic Hypothesis of AD
- Diminished Ach level
- Acetylcholinesterase loss in nuclei

History of Tacrine
- 1940s: potentiate morphine
- Antagonist to respiratory depression
- Antagonist to tubo-curare
- Extends succinyl choline
- Reverses delusions of anticholinergics
- Treats symptoms in EP
- Inhibits acetyl cholinesterase
- Enhances Ach release; increases Ach receptors
- Decreases receptors

Farlow Study
- Dose-response effect study
- ADAS (Cognitive and noncognitive) test results
- 80 mg (CGIC)
- 27% with 7 point ADAS rise

Summary of Farlow Trial
- 2 to 4-point rise in ADAS
- Problem with single enrichment drug
- Possible dose response effect
- 80 mg/d delays disease by 178 days

Tacarine Side Effects
- GI (nausea, diarrhea)
- Rise in LFTs (liver function tests)
- HA, depression

re Rise in LFTs
 - Women more often than men (2:1 ratio)
 - 50% improve with lower dose
 - 10 to 30% require discontinuing drug
 - Probably dose related

Liver Pathology (Apr 6 *JAMA* article)
- Check ALT q week
- After 3 months and maximum dose, check ALT q 3 mos
- Less than 3 times ULN: continue drug
- 3 to 5 times UNL:
- Greater than 10 times UNL: discontinue

Tacrine Dose Schedule
- 10 mg qid for 6 weeks
- 20 mg qid for 6 weeks
- 30 mg qid for 6 weeks
- 40 mg qid for 6 weeks

Therapeutic Results
- 30-50% improve
- 50% have elevated LFT's

***4,000 patients on Tacrine have had no deleterious liver effects

Target Signs	Treatment
Delirium	Neuroleptics (Haldol)
Agitation	Neuroleptic (Trazodone)
	Propranalol
Depression	Antidepressants
	SSRIs
Insomnia	Neuroleptics
	Benzodiazepine
	Trazodone
Anxiety	Benzodiazepines
	Propranalol
	BuSpar
Seizures	Anticonvulsants

The Weathervane Russell T. Stodd MD

Capitation Contracts—There are winners and there are losers. The winners are the insurance carriers, the losers are patients and doctors.
Figure it out. The HMOs in South Florida are collecting the highest rates in the nation for physician services, yet their payout to MDs is near the lowest. In some contracts ophthalmologists were receiving $1.70 a month per patient, while it was acknowledged by an eye surgeon that he needed $5.15 a month to meet 70% of the Medicare fee schedule. The not surprising result is that quality has deteriorated, as the physicians have cut corners by delaying surgery or failing to treat glaucoma and diabetic patients adequately. Most Medicare enrollees are not as obtuse as the doctors who are willing to work under such contracts, and 95% of the nation's Medicare patients retain fee for service care.

The difference between the taxidermist and the tax collector is that the taxidermist leaves the hide.
Long ago the IRS rejected the three martini lunch and the country club membership as business expense. Now the continual scouring for your dollars has resulted in an attack on organizational dues. Two-thirds of AMA dues for 1995 are tax deductible, but one-third will not be because of AMA lobbying expenditures. Moreover, the IRS will also look at Academy dues, county and state society dues, etc. What's next, United Way donations?

Everything is in a state of utter disheveled ment.
For those of us who use synthetic implants in our practices (don't we all?), the product liability issue is a serious concern. The DuPont Company has defended more than 450 cases related to failed implants, and has lost only one, which they expect to overturn on appeal. However, the estimated cost to defend these suits has exceeded $40 million. Because the suppliers of such material primarily serve industrial markets, the minuscule medical applications provide a very small but risky area. Therefore, why bother? The recent exodus of several major suppliers threatens to interrupt the supply chain for biomaterials with a potential shortage of implants, such as vascular grafts, heart valves, catheters, shunts, reinforcing fabrics, sutures, and pacemaker and defibrillator leads. The raw-material and component companies can simply claim that they do not intend for their products to be used medically. Ah then, who becomes the deep pocket?

Nothing looks as good close-up as it does from far away.
The AMA Division of Undergraduate Medical Education announced that applications for medical school in 1993 reached a record 42,808, with an even higher number slated for 1994. Forty percent of the 1993 applicants were accepted. Apparently, the concerns in the medical profession about the eventuality of health system reform have not deterred or intimidated those planning for a medical career.

Here she comes, Miss America—
To help us sort out the very best from the others, *U.S. News and World Report* asked 150 eye surgeons for the top ophthalmic hospitals, and the winner is—Miami's Bascom Palmer Eye Institute. Wilmer Eye was number two, followed by Wills Eye, Massachusetts Eye & Ear, Jules Stein, and University of Iowa. Mayo was number 11 on the list. The magazine admitted that the ranks are based solely on reputation, charm, and sex appeal.

Nothing so needs reforming as other people's habits.
Statistics on malpractice claims for the first half of 1993 reveal that 3% of the cases were against ophthalmological surgery with an average payment of $115,643. As they have for the past 10 years, Ob-Gyn specialists suffered the greatest number of complaints at 15% of the total with an average pay-out of $184,720. Pediatrics and neurosurgery had the highest average payment of $206,000.

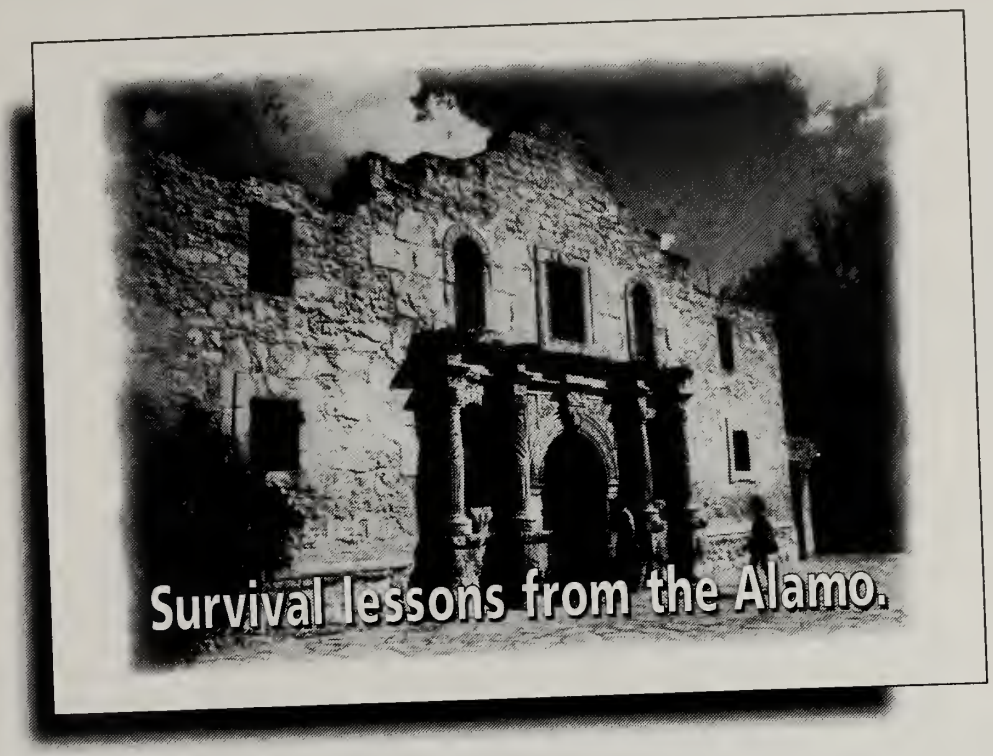
A man with a new idea is a crank until the idea succeeds.
Although Congress has begun discussion to amend the federal tax code to allow people to establish IRA-like savings accounts for medical care, the real action is at the state level. Five states have already adopted legislation to allow people to set aside a specified sum of money—deferred from state income tax—to pay health care bills or purchase insurance. California, Michigan, New York, Pennsylvania, Illinois, and South Carolina are considering similar legislation. A resolution will be presented at the October 1994 meetings of the Hawaii Medical Association House of Delegates urging our legislature to consider such a law for Hawaii's citizens. It is the only health system reform that reduces third-party intervention and encourages patient prudence in seeking medical care.

A good legacy wondrously alleviates the sorrow men feel for the death of a friend.
Ogden D. Pinkerton MD has passed from Hawaii's medical scene at age 81. His health had deteriorated in recent months, and he died quietly in his sleep on September 5, 1994. Known as OD to his colleagues and friends, he was a giant in our medical community. He was cherished by his family, beloved by his patients, and respected by all. OD served in virtually every area of organized medicine; among them the Honolulu County Medical Society, the Hawaii Medical Association, The Queen's Medical Center, the American Academy of Ophthalmology, and especially in guiding and supporting the Hawaii Ophthalmological Society. Our ranks are diminished by the loss of this most honorable man.

The academy honors John M. Corboy MD
The American Academy of Ophthalmology announced that John M. Corboy MD is a 1994 Honor Award recipient for significant contribution to ophthalmology through presentations at the annual meeting, and for service on Academy committees. Wahiawa eye surgeon Corboy was once an active member in the HOS.

Addenda
▲ More than 150 hues can be distinguished by human cones.
▲ Never characterize the importance of a statement in advance.

Aloha and keep the faith.
rts
■



Interactions

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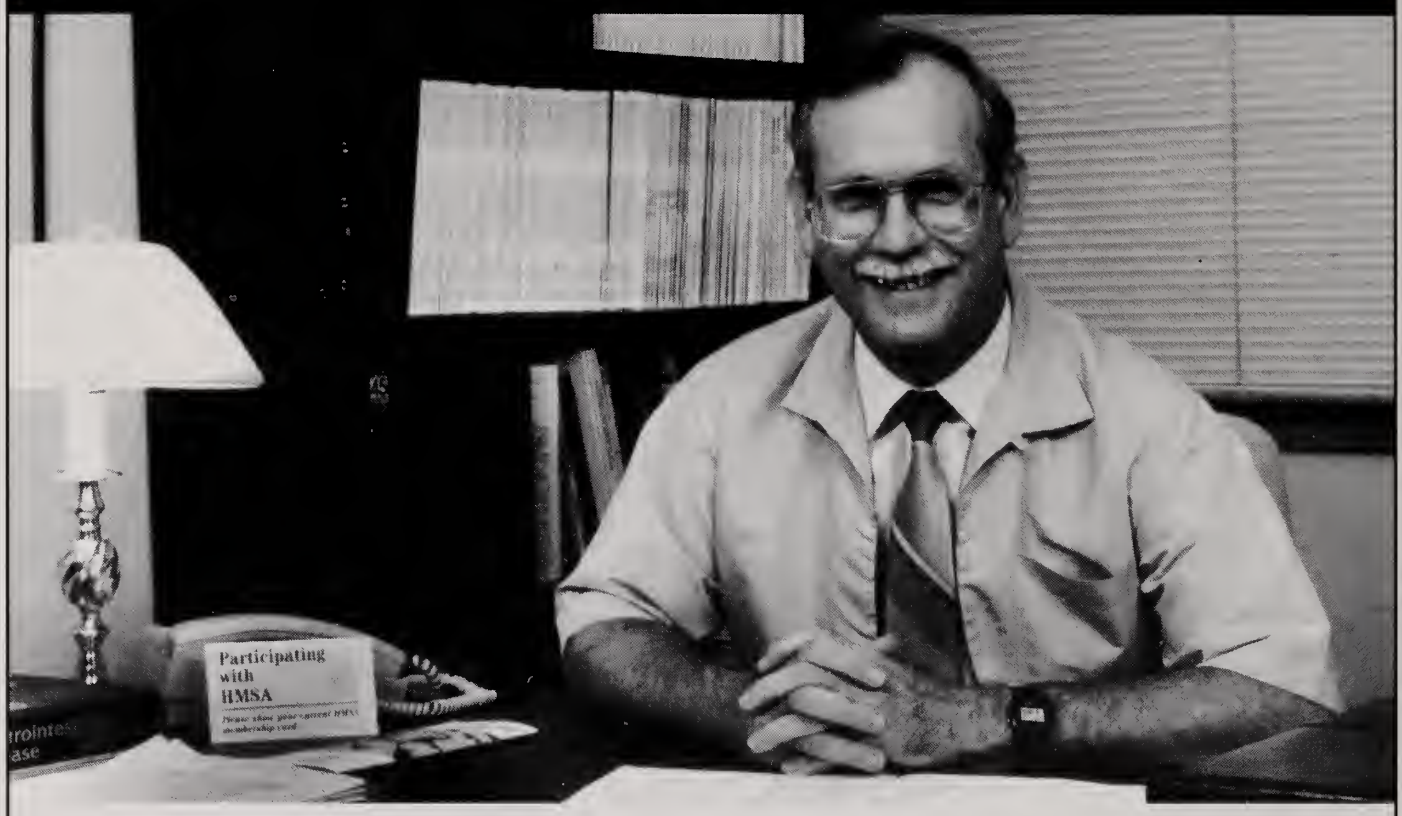
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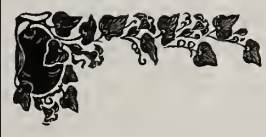
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Hina—The Goddess of Fishermen

Although the realm of fishing was dominated by men and held many restrictions for women, curiously enough Hina was a goddess of fishermen. Her husband *Kuula* and her son *Aiai* were also fishing gods.

Hina's husband and son are associated mainly with the establishment of fishing stations and shrines. In her various forms, Hina herself seems to have had a much wider influence over the fishing domain. She created the reefs with all their creatures; instructed her sons how to make and bait fishing implements; lent her body forms to fishing rituals and assisted in making canoes. Also noteworthy is that Hina was the mother and grandmother of two legendary figures born as pieces of rope or cord: The heroes *Kana* and *Palila*.

The form of Hina as a fishing goddess was called *Hina pukui* which means Hina gathering fish.

Editorials

Native Hawaiian Health Special Issue Dedicated to George Mills, MD (1921-1992)

Norman Goldstein MD, Editor

The editors and staff dedicate this special issue of the *Hawaii Medical Journal* to the memory of a very special *kanaka*—Dr George Hiilani Mills MD.

George was born in Pepeekeo on the Big Island of Hawaii in 1921. He attended the Kamehameha Schools, Colorado College, and Boston University School of Medicine, where he received his MD in 1950. He then served his internship and medical residency at The Queen's Hospital in Honolulu.

This very special physician of Hawaiian ancestry wore many hats during his 70 years. He was President of the Honolulu County Medical Society, the Hawaii Medical Association, the Hawaii Foundation for Medical Care, the Hawaii Society of Internal Medicine, the Hawaii Heart Association, and was very active in the Hawaiian civic clubs.

George was also very active in Hawaii's politics. He was a candidate for lieutenant governor of the state in 1966, and previously served as senator in the Hawaii State Legislature. During his term as senator, the University of Hawaii John A. Burns School of Medicine became a fully accredited four-year school.

He also served as medical director of Kamehameha Schools and Maunalani Hospital. George worked diligently to carry out his ideas for utilization review and peer review, cost containment, coalitions with business, quality of care studies, and the Native Hawaiian Health Care Act. If George were still with us, he would be very, very busy with our health reform activities today.

George received many honors—one of the most prestigious was the AMA Benjamin Rush Award. He was named the Medical Father of the Year by the Honolulu Chamber of Commerce (*mahalo* to Bobbi and their four children for sharing George with so many people in Hawaii); the outstanding Hawaiian in 1968 by the Association of Hawaiian Civic Clubs, and their appointed President *emeritus* in 1984. The Hawaii Medical Association named him Physician of the Year in 1966. George was extremely pleased when he received the *Lei Hulu Mamo* Award for the Hawaiian Civic Political Action Committee in 1989. This award represented the reign of King Kamehameha I; the cloak of rare *mamo* feathers symbolizes Kamehameha's wise and fair rule.

George Mills ended his survey of 200 years of Hawaiian health reprinted in this issue of the *HMJ* with, "The future looks promising, 'so keep healthy, Hawaiians.' "[1]

In addition to the many excellent new articles that appear in this issue, we have reproduced George Mills' article "*Hawaiians and Medicine*," which first appeared in the October 1981 *Hawaii Medical Journal*. Many thanks to George's widow, Bobbi, for her continued support of many Hawaiian activities—as well as her editorial in this issue of the *Journal*.

Chiyome Fukino MD did an outstanding job as editor for this special issue, getting a diverse group of authors to help produce another very special issue of the *Journal*. This issue will, undoubtedly, be the reference on Hawaiian medicine for many years to come.

Thank you, Chiyome.

Memories of a Great Husband, Physician, and Native Hawaiian

Bobbi Mills

How strange that two people who had been separated by nearly 6,000 miles should end up embarking on a new life at the same time and in the same place.

Young George Mills had graduated from high school in Hawaii. His football coach and the principal of the school agreed that he had great potential; so after his graduation, he was whisked off to the *Lurline*, given a bus ticket for the trip inland, and enrolled as a freshman at Colorado College.

I grew up as Bobbi Freeman in Boston. I was uncomfortable with New England stuffiness and decided to head west where I thought things would be more relaxed and people more friendly. Two days' train travel brought me to the same college.

Our pockets were empty (we later discovered this was a perpetual condition) when we arrived, but the semester's expenses were paid, and we had jobs to provide spending money. We had met at a sorority tea dance (and how deadly those were!), then went on hayrides on nearby beaches (where he saw his first rattlesnake and was literally paralyzed with fear), chili cook-outs in the Garden of the Gods, football games, and the usual run of college social activities.

At the end of our freshman year, he gave me his fraternity pin, thus ritualizing the beginning of a 50-year relationship.

This was the beginning of my wonderful life with George Mills, later Dr Mills, who returned to Hawaii after graduation from medical school in Boston to live out his days practicing medicine in the place of his birth.

But I'm getting ahead of myself.

My family was not at all impressed with my relationship with a Hawaiian and hoped I would not marry him. As a matter of fact, they announced that I need not come home if we took such action. But our hearts won out, and we were married in Colorado Springs in 1944. He subsequently earned a master's degree in biology and chemistry.

To make ends meet, we were house mother and father in the civilian men's dorm. This was the latter part of World War II and our residents were a very strange but interesting assortment of returning military, rejects, and those who were too young for the service.

One boy's father was a prominent heart surgeon in Los Angeles, and on meeting George, decided that he was perfect material for medical school. He saw to it that George was accepted to Boston University. Again without the nickels rubbing together, we had to ask my family if we could live with them. Reluctantly they allowed this, as they ran a boarding house and needed help. (I vowed I'd never wash another john or make another bed after four years of that!) I thought it best at the time not to tell them that I was three months pregnant.

After the struggle of his life, George managed to get his diploma, burning the midnight oil just about every night learning origins and insertions of muscles, abbreviations used in pharmacy, endless German/Latin names for diseases, and finally one full year of "home medicine" in the bowels of Boston where his little black bag was the only thing that protected him from all kinds of mayhem.

We returned to Hawaii on the *Lurline*—the Pan Am clipper was too expensive and frightening—and we were met at the Aloha Tower by his whole family. He had been away for 10 years, the war had intervened, and they were anxious to meet his wife and son, George Jr, who had been born on a bitterly cold morning in February of George's freshman year.

After four years of internship and residency at The Queen's Hospital, he set out to practice with Alsup Clinic as a specialist in internal medicine. The clinic grew to the extent that it had to move to larger quarters in downtown Honolulu at 1154 Bishop Street.

He was one of the first part-Hawaiian doctors to return to Hawaii to practice and thus drew many of his patients from that group. And he was one of the first to become the physician for many of the hotels in Waikiki. He always hated that job during the Christmas holidays because visitors in need of hangover cures would insist on house calls so they wouldn't miss any of the holiday fun.

He became active in the American Medical Association and attended meetings four times a year as a delegate from Hawaii, eventually being elected to the Board of Trustees. This was one accomplishment of which he was most proud. He always identified vocally with one of the smaller states, and saw to it that the winter meeting of the Board of Trustees was held in Hawaii every fourth year. He also held the positions of President of Honolulu County Medical Society and of Hawaii Medical Association. This led to his involvement with medical economics, which became one of his consuming interests, and one to which he continued to contribute regularly.

In 1966, he was asked to run for lieutenant governor. He always said this was one of the most intense educational experiences of his life. He later ran for state senator and was elected for one four-year term in 1970. He was grateful for this involvement and threw himself wholeheartedly into the political process.

Through all of this, his major dedication was to his people. He became actively involved in all things Hawaiian, joining clubs, serving on committees and generally fostering support, especially in the area of the health of the Native Hawaiian. Diabetes and many types of cancer were devastating in their attack on the Hawaiian people. Early on he saw that these were areas where causes could be clearly identified and preventive action taken.

His later years were devoted almost



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–Keith Katano,
Group Administrator,
Medical Arts Clinic

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exclusively to pressing for programs providing prevention and treatment of diseases which peculiarly attacked Hawaiians.

It is interesting that his later years also were spent among the children of Hawaii at The Kamehameha Schools, where he served as medical director for some 25 years. He was ever proud of this relationship and was devoted in his support of the Schools and of the Bishop Estate. And he never missed a football game—for that was after all where he got his start.

Though none of his children became physicians, nor did they enter an allied field, they still carry their Hawaiian heritage proudly and will doubtless contribute their share to the perpetuation of their culture.

And as his widow, I continue to try in my own way to show my appreciation of these wonderful islands which have become my home and the home of three of my four children.

HMA President's Message

Frederick C. Holschuh MD

I heard a statement recently on Hawaii Public Radio that said, "Any good leader picks two or three major projects to work on." I wish your HMA leadership had this luxury. It seems every week there are new issues, many eroding our ability to maintain the doctor-patient relationship.

I want to summarize the key issues and concerns that must be dealt with immediately and mention some others that we will work on during the next year.

The most urgent concern we all have at this moment is the progression of the capitation process toward Phase 2 of MedQuest. This group will include a very frail and vulnerable population of our patients. Quest Phase 2 will include among others the aged, blind, and disabled. Before Quest Phase 2 is implemented, we must make sure that the plan neither rations nor restricts access to care.

HMA is in the forefront of this planning. The MedQuest Advisory Board is chaired by Past President Dr Andy Don, and Dr Steve Wallach chairs the Quest Task Force and will represent HMA in discussions of Quest Phase 2. A report to the legislature is due next month, so there is some urgency to this issue.

The nurse-practitioner prescribing issue needs urgent attention. Past President John McDonnell MD represents HMA on the ad hoc Formulary Committee of the Board of Medical Examiners. He is on top of the issues and is able to convey the wishes and concerns of the HMA Council to the BME.

We are in the final stages of forming the committees for 1995. There are a number of critical issues, and I have called on the expertise of the officers, HMA staff, and past presidents to create solid, dynamic committees for the HMA.

A critical committee as always will be Workers Compensation, which again will be capably chaired by Drs Calvin Kam and Bernard Scherman.

As an emergency physician, I have a personal bias about two other committees. I want to resurrect the Emergency Medical Services Committee, combine it with the Public Safety Committee, and have it work on prevention of violence in the home and community, promoting safety gear for kids on bikes and skates, helmets for motorized cycles, alcohol and other drug impairment for drivers, publicizing the issue of compassionate care. (Do not resuscitate advanced directives for Emergency Medical Services, etc.)

I also want to see the Alcohol and other Drug Abuse Committee become active and have asked Dr Barry Odegaard to chair it. I would like to see the Computer Committee become more helpful to the practicing physician and work on creating plans for physician information-sharing networks. I am hopeful that Dr Randy Wong will again chair this committee.

I have been asked by a few of our members to see that the committee on Medical, Ethical, Moral, and Legal Concerns be very active this next year. Many of the issues regarding HIV/HBV infection in health care providers will fall under this committee's purview; for the most part, the infectious disease aspects have been settled.

All of HMA's committees are vital, and if I left any of them out of this discussion, there was no intent to minimize their importance.

Finally, the Legislative Committee must be strong, dynamic, and informed. Dr Wallach, who has effectively chaired this committee, will serve in an advisory capacity, and we will probably create a co-chair position with two other members.

As we enter 1995, we must be responsive to our members' needs and enlist those physicians who seem not to realize the importance of organized medicine. I will ask that the Membership Recruitment Task Force be very active, and I plan to visit hospital medical staff meetings with the other officers to explain HMA's mission and goals.

I look forward to an interesting year and thank you for your support and your faith in me.

Letter to the Editor

Dr Betwee makes some cogent points, and I agree with many of them. But I do not believe that we can blame a perceived lack of humanity in some physicians on their medical school experience alone. This is too easy an answer. Although research productivity, and not "humaneness," is the single most important criterion for faculty advancement and appointment at most traditional Mainland medical schools, this is not true for clinical faculty at the University of Hawaii. Most of my colleagues here are committed to teaching and to humane patient care. Yet, as in most schools, some of our graduates are not particularly humane.

The values that we should treasure in our society—responsibility for one's own actions and an empathic concern for the welfare of others—have been replaced by a pervasive sense of selfishness and a continuing need for self-gratification. Sadly, it is likely that physicians are as influenced by these examples as are other members of our community.

Irwin J. Schatz MD
Professor of Medicine

*Irwin Schatz MD offers additional comments "On the Quest for the Humane Physician" (*Hawaii Med J. *1994; 53:196-199). See Letter to the Editor, Jon Betwee MD,* Hawaii Med J. *1994; 53:271-272.*

Dr Schatz served the John A. Burns Medical School from 1975 to 1990 as Chairman of the Department of Medicine and Program Director of the University of Hawaii Integrated Medical Residency Program. In 1992, he was honored by the American College of Physicians as the Hawaii Laureate.

The editor welcomes letters from members of the Hawaii Medical Association as well as nonmembers. All letters must be signed with the writer's correct signature and include the address and telephone number for our verification.

Letters should be on a single subject and no longer than 200 words. Send letters to Letters to the Editor, Hawaii Medical Journal, 1360 S. Beretania Street, Second Floor, Honolulu, Hi 96814.—ED

Medical School Hotline

Improving Health Care for Native Hawaiians: An Initiative of the John A. Burns School of Medicine

Maurice A. Hitchcock EdD
Office of Medical Education
John A. Burns School of Medicine

For years it has been known that many Hawaiians suffer unique hardships and circumstances. Such is the case with the health status of Native Hawaiians. Native Hawaiians generally suffer from the same major illness as the general population of the United States (ie, cancer, diabetes, heart disease) but with greater severity and mortality. A major contributor to the incidence and severity of disease among Native Hawaiians is poor access to health care. Low incomes, lack of health insurance, and lack of culturally compatible care are barriers for Hawaiian patients.

In recognition of these problems, the John A. Burns School of Medicine has begun an initiative to expand research and training in Native Hawaiian health. The effort will focus on increasing enrollment of Hawaiian students, assisting currently enrolled Hawaiian students to succeed, training all students to care for Hawaiian patients, hiring additional Hawaiian faculty, and expanding research of Native Hawaiian health and illness.

Enrollment.—Many of the barriers to care for Hawaiian patients could be solved by increasing the number of Native Hawaiian physicians and placing them in geographical areas of need. Over the past eight years, JABSOM has admitted on average eight Hawaiian students a year; there are currently 34 Hawaiian students enrolled in the undergraduate curriculum (about 14% of current JABSOM enrollment). Our goal is to increase the number of Hawaiian students admitted to 12 per year/48 students in all four years or 21% of JABSOM enrollment.

Retention.—Of the eight Hawaiian students who enter medical school each year, chances are that three of them will experience academic difficulties (ie, failure of a unit, repeating a unit, dismissal) during the course of their training. The recent change in the JABSOM curriculum from a traditional approach (which emphasizes large-group courses, lectures, and tests) to a problem-based approach (which emphasizes small-group tutorials, peer-teaching, and performance-based exams) should be more compatible with the learning styles of Native Hawaiian students and thus help them succeed. We have hired a full-time student development coordinator to work with Hawaiian students at risk of academic problems.

Curriculum.—We hope to revise the curriculum so that *all* students (Native Hawaiian and others) will learn the skills associated with treating Native Hawaiian patients. Half of the graduates of JABSOM eventually practice in Hawaii; chances are that all of these physicians will treat Hawaiian patients and thus will need the skills and attitudes appropriate for such care.

Faculty.—Molding JABSOM into a recognized center for research and training in Native Hawaiian health will require the development of additional Hawaiian leaders on our faculty. Our students need Hawaiian physicians to look to as role models; we need excellent instructors of Hawaiian culture and interpersonal skills that are important in the care of patients.

Research.—Several funded research projects involving Native Hawaiian health issues have evolved as part of the Native Hawaiian Research Initiative of the Pacific Basin Research Center. Naleen Andrade MD is serving as principal investigator of *"A Longitudinal Study of Adolescent Mental Health."* Richard Arakaki MD is the principal investigator of *"A Descriptive Epidemiological Study of Diabetes Mellitus and Cardiovascular Risk Factors in Hawaiians."* Marjorie Mau MD will direct a new project scheduled to begin in February 1995 entitled *"Cultural-Based Interventions for Diabetes in Native Hawaiians."* We hope to spawn other similar projects in the future.

We have developed a clear vision for JABSOM and have had some initial success. In 10 years we hope we can look back on this time in our history as one in which an important transition began.

Historical Notes

John A. Breinich
Hawaii Medical Library

In 1944, the Board of Health had a series of 27 weekly Sunday morning radio programs on KGU. The general title was "How to Keep Well" with individual topics covering nutrition, public health, tuberculosis, and special topics of concern such as dengue fever and plague. On the March 12, 1944 program, Captain Wesley E. Gilbertson, U.S. Public Health Service officer in charge of dengue control at the Board of Health and David D. Bonnet PhD, U.S. Public Health Service junior biologist and entomologist, discussed the dengue fever problem in Hawaii. They reported that since the start of the epidemic in July 1943 more than 1,400 cases had been reported.

Mosquito control measures were instituted and there were more than 77 inspectors making daily rounds throughout the city, and inspectors on all of the other islands. Intense programs to eradicate breeding areas for mosquitoes were in effect and fines of $25 were levied for residents who continued to permit breeding on their property after repeated warnings.

Plague was also a topic of concern as recently as 1944. On the May 7, 1944 program, Bernard J. McMorrow, Director of the Bureau of Sanitation of the Board of Health spoke. He said:

> "...Plague was first reported in the Hawaiian Islands in December of 1899. The disease first appeared in the city of Honolulu. In 1900 it appeared on Maui and also on the Island of Hawaii. In 1901 it appeared on the Island of Kauai. The introduction of plague in Hawaii coincided with the spread of this disease throughout the world, probably from China as a starting point. The disease is considered to have spread from Chinese ports to ports throughout the world through shipping. In Hawaii the infection disappeared from Honolulu and Oahu in 1910. To our knowledge it has not reappeared on Oahu since that time. It disappeared from Kauai in 1906. The disease, however, has persisted on the islands of Maui and Hawaii since its introduction into those islands. In certain areas of the islands of Maui and Hawaii the disease has established itself in wild field rats."

The radio program continued with a discussion of how residents can take precautions to control rats and to keep rubbish and

nesting areas under control. The last case of plague in Hawaii was the recovery of a patient in Honokaa in December 1949. Infected rats have been found since then, but no transmission to humans has been recorded.

HMA Alliance

Lillian Nishi, President

My role as the president of the Hawaii Medical Association Alliance is to ignite the spirit of our constituency and direct that strength toward the vital endeavors of our organization.

Susan Foo has been a strong and energetic leader, the originator of all our ongoing projects, and a nationally honored fund-raiser for the AMA-Education and Research Foundation. As I follow in her footsteps, I need your help. Our plans for the coming year include 1) an all-out effort to increase our membership; 2) the development of a communication network; 3) the mobilization of our membership in the political arena; and 4) further improvement of our fund-raising efforts.

Increase membership.—Our spouses have made significant investments and sacrifices toward their life's work in medicine. It is incumbent upon each of us to provide our support through participation in the Hawaii Medical Association Alliance. As our numbers grow, our voice in the community grows.

Communication network.—Strength in numbers is important. However, as our numbers grow, it becomes even more vital that every member be kept well informed of critical issues. The development of a telephone tree will serve as the basis for an improved communication network that will allow us to stay informed.

Political involvement.—Our state legislators are very accessible to those who participate in their campaigns. We found such a friend in Senator Matsuura, who worked vigorously for medical tort reform a few years ago. He became an active part of that campaign, lending his office, facts, figures and staff. A single individual's effort in the political process can open channels of communication for the entire organization.

Fund-raising.— Of course, every organized effort requires money. Our willingness to contribute now will continue to pay dividends for years to come, especially in light of the present focus on health care reform. We must remember that an offer to help *tomorrow* may be too late.

Those are just some of our plans for this coming year. Working together, we can make a difference. Our voices will be heard on pressing issues such as health care reform if we join together.

Before I close, I would like to pass on to you two examples of effective participation in the political arena here.

First, years ago, the then-chairman of the Senate Judiciary Committee let out of his committee a bill that, if enacted, would have allowed the attachment of the assets of doctors' spouses—even if those assets had been accumulated prior to marriage. Informative flyers were mailed to all auxiliary members. In response to the urgent call for mobilization against the legislative measure, the members collected donations totaling more than $10,000. This amount was collected in just two weeks.

Second, prior to our past primary election, three doctors sponsored an ad in opposition of an incumbent legislator whose voting record was clearly hostile to the goals of the medical community. Several doctors and their spouses walked that district with the challenger. Together, these doctors and their spouses were instrumental in helping to unseat the incumbent from office.

Ella Wheeler Wilcox wrote, and I quote an excerpt:

There are two kinds of people on earth today,
Just two kinds of people, no more, I say.
The two kinds of people on earth I mean
Are the people who lift and the people who lean.
In which class are you? Are you easing the load
Of overtaxed lifters who toil down the road?
Or are you a leaner who lets *others* bear
Your portion of worry and labor and care?

Let's work together to support our medical community that is so vital to Hawaii. Remember—we *can* make a difference; and we *will* make a difference!

Military Medicine

Defense Women's Health Research Program

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

The Department of Defense (DOD) has initiated broad measures to integrate women into all aspects of military life. Women assume roles in leadership positions throughout all branches of the service (Army, Air Force, Navy, and Marine Corps), and are increasingly participating in areas traditionally filled by men. Women serve on board ships at sea, as aviators, and are more frequently facing combat with line units.

The full participation of women in all aspects of military service requires systematic investigation of relevant health and performance issues. A program to consolidate research efforts within the DOD was initiated in fiscal year 1994. The purpose of the Defense Women's Health Research Program is to sponsor medical research in DOD facilities that address the following goals: 1) To solve problems faced by servicewomen that will directly improve safety, health, and military effectiveness; 2) to establish a triservice, multidisciplinary program to bring together researchers from military and civilian organizations; 3) to enhance and accelerate ongoing efforts; 4) to foster new collaborative efforts; and 5) to expand the scope of biomedical research on military women's health issues. Approximately $10 million was made available for this program. Specific areas of interest include: Psychological stress associated with military deployment; toxicology and teratology of military materiel; strategies to prevent musculoskeletal injuries where disproportionately high injury rates are observed in women; nutrition of active servicewomen; pregnancy and postpartum issues; gender comparisons of stress, sleep restriction, intense physical activity, and exposure to environmental extremes; and health factors associated with clothing and equipment.

The U.S. Army had 38 projects approved for funding in August, 1994. Of these, three were Tripler Army Medical Center proposals. The TAMC projects propose to study effects of age, time of day, and gender on water conservation; influence of

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progesterone on mastodynia; and psychological and stress factors affecting retention and deployability. Other projects included investigation of exercise performance and the menstrual phase; the effects of smoking and exercise performance in women; and relationships between specific military duties and birth outcomes.

This research initiative will provide valuable data on the panoply of health issues that impact healthy and ill women who serve in the Armed Forces. The health of the woman soldier will undoubtedly be enhanced. The benefits of this research will extend to the much-needed growing knowledge base that is central to all women's health research.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

Journal Review

Pacific Health Dialog

Reviewed by Grahame Feletti PhD
Office of Medical Education
John A. Burns School of Medicine

Congratulations to Drs Sitaleki Finau, editor, and Rex Hunton, associate editor, for an excellent inaugural issue of *Pacific Health Dialog*, dated March 1994. This journal began as a twice-yearly publication of the Pacific Basin Medical Officers Training Program and the Fiji School of Medicine. *PHD* focuses on community health and clinical medicine for the South Pacific and is intended for doctors, nurses, administrators, and educators—as well as those working in public health, agriculture, and economics. However, I won't be surprised to see it appealing to university teachers and students in all health professions, biological and social scientists, and even regional politicians!

Skillful editing has resulted in a very professional and enjoyable first issue. The contents are presented in a simple, easy-to-find format. Key statements are highlighted and graphics are well placed in each article to break the monotony of text. All contributions address salient health issues (including nutrition of mothers and infants, marijuana use by youths, anatomical basis of sex functions, rheumatic fever, and multiprofessional teamwork by Pacific doctors and nurses). What makes these papers particularly interesting is their relevant background, written to orient a diversity of readers. Authors not only present their data and opinions coherently, but also with a clear sense of the work still to be done to improve regional health.

In addition to fostering a wide readership, *Pacific Health Dialog* offers a variety of formats to potential contributors. Formats include: Original contributions, special articles and research reports (all of which are refereed), perspectives, reviews and book reviews, plus other information and news relevant to the broad disciplines of community health and clinical medicine in the Pacific islands.

Dr Pretrick, head of the Pacific Islands Health Officers Association and Secretary of the Department of Human Resources in the Federated States of Micronesia, provides a stimulating guest editorial in the inaugural issue. He sums up the exciting potential of *Pacific Health Dialog* by saying that it can tie together many publications dealing with the region's health issues; promote wide discussion and exchange of information and ideas; and give the many health professionals in the region a venue to inform other interested parties about "what is happening to health in their corner of this vast ocean." Dr Pretrick also notes that many of the papers in this issue are devoted to the health issues of women and children—two highly important target groups for monitoring the effectiveness of community health care efforts.

As a second lead-in to this issue, I highly recommend Dr Finau's paper, "Health Care in the Pacific: Who Would Bell the Cat?" He provides an excellent introduction to the health care systems and health problems of Pacific island nations. He points out that these nations have many health problems in common, solutions to which are complicated by perceptions that increasing dependence on Western academic qualifications, lifestyles or goods are essential to a good life in the Pacific. The career-stepladder model of medical education developed by the PBMOT Program and the Fiji School of Medicine seems to address this issue. Whether "belling the cat" makes life easier for cats (trainee medical officers), dogs, or birds (use your own imagination here) clearly depends on the local context of supply and demand!

The strong focus on community health and appropriate clinical medicine identified in Finau's paper, and the PBMOT curriculum elaborated by Dr Dever in his contribution, share a common link with another exciting curriculum development at the University of Hawaii. Its *Ke Ola O Hawaii* project also recognizes the need for health professionals who can function effectively in multiprofessional teams, working together with the community, in a range of community settings. Medical, nursing, public health, and social work students are learning to access and integrate both cultural and scientific knowledge gained by doing community health projects as part of their regular course work. State-of-the-art telecommunications and desktop computers enable decentralized learning to occur using distance education programs and resources being developed at the School of Medicine, the Hawaii Medical Library, and at regional medical centers like The Queen's Medical Center and Tripler Army Medical Center. Access to good quality journals like *Pacific Health Dialog* will further provide health (and other) professionals and students with a powerful resource for serving the peoples of the Pacific.

Subscriptions, advertising, and journal inquiries should be forwarded to: PHD Manager, Resource Books Ltd, PO Box 28-685, Remuera, Auckland, New Zealand.

Book Reviews

Laau Hawaii: Traditional Hawaiian Uses of Plants
Isabella A. Abbott. Bishop Museum Press, Honolulu, 1993. $22.95, 162 pages. ISBN 0-685-60583-3.

Plants in Hawaiian Culture
Beatrice H. Krauss, illustrations by Thelma F. Greig. University of Hawaii Press, Honolulu, 1993. $26.95, 272 pages. ISBN 0-8248-1225-5.

Polynesian Herbal Medicine
W. Arthur Whistler. National Tropical Botanical Garden, Lawai, Kauai, 1992. $32.95, 248 pages. ISBN 0-915809-16-8.

Traditional Hawaiian culture was heavily dependent on plant materials since metal ores and ceramic clays don't occur in Hawaii. The role of plants in the culture and healing practices of Hawaii is the focus of several recent books including ***Laau Hawaii: Traditional Hawaiian Uses of Plants*** by Isabella Aiona Abbott, ***Plants in Hawaiian Culture*** by Beatrice Krauss and Thelma Greig, and ***Polynesian Herbal Medicine*** by W. Arthur Whistler.

Laau Hawaii: Traditional Hawaiian Uses of Plants by Isabella Aiona Abbott was published in 1992. Dr Abbott is Professor of Botany at the University of Hawaii at Manoa, but in this work she emphasizes the cultural aspects of ethnobotany. In her introduction she writes, "This book is structured to demonstrate the vital link between the Hawaiian flora and Hawaiian culture." Dr Abbott then introduces the reader to the history and culture of Polynesia and to the plants that the Polynesians introduced to Hawaii. The balance of the book describes the uses of both introduced and indigenous plants and includes chapters on food, clothing, cordage, construction, fishing, warfare, religion and hula. Dr Abbott includes information gathered through interviews with contemporary Hawaiian *kupuna*, many of whom are family members or friends. This contemporary information enables Dr Abbott to document the diversity in traditional Hawaiian culture and to record cultural changes that have occurred since the written records of the early 1800s, and to preserve information which might otherwise be lost. This scholarly work has extensive references and excellent, detailed chapter notes, but it is written in language accessible to the lay person.

Chapter 13, "Medicines and Healing," covers the practices of Hawaiian healing professionals, including the training and responsibilities of the *kahuna laau lapaau*, who specialize in the use of medicinal plants. Dr Abbott also includes an overview of 12 plants commonly used in traditional Hawaiian medicines. Each plant is identified by Hawaiian, English and scientific names. A botanical description is included, as well as information on how the plants were used in healing. Eight black-and-white photographs are included, but other sources might be consulted for more comprehensive illustrations.

The appendix includes a useful table of Hawaiian plant names with cross references to common English and scientific names. In the index, direct listings for plants are by Hawaiian name only, but cross references from English and scientific names are included.

In 1993, Beatrice Krauss, a well-known local ethnobotanist, and Thelma Greig, a professional photographer and illustrator, teamed to produce ***Plants in Hawaiian Culture***. This book gives a readable overview of Hawaiian ethnobotany in nontechnical language. Dr Krauss defines ethnobotany as the study of the interrelation of native peoples with plants and examines this relationship as it existed in pre-contact Hawaii.

The first half of *Plants in Hawaiian Culture* describes the use of plants in all aspects of Hawaiian life. Most of the chapters include excellent line drawings by Thelma Greig detailing the many uses of the plants. Chapter 9, "Medicine and Medicinal Herbs," outlines some of the beliefs underlying the practice of traditional Hawaiian healing and gives a summary of the spiritual training required to become a *kahuna laau lapaau*. Dr Krauss describes some of the most important medicinal plants and details their preparation, but does not provide a complete survey of plants used in traditional Hawaiian healing.

The second half of the book is composed of descriptions of 98

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plants with photographs arranged by Hawaiian name. The descriptions are concise and informative and are accompanied by Thelma Greig's fine black-and-white photographs. While of superb quality, the photographs would have been more useful for identification purposes if they had been in color so that leaves, fruits, and flowers could be more easily distinguished.

These plant entries would have been easier to use if references to the discussions in the first half of the book had been included. The current format requires that the reader check the index to identify uses of a particular plant. *Plants in Hawaiian Culture* includes a good bibliography and a glossary which cross references the Hawaiian, English, and botanical names of the plants mentioned in the book. The index also includes direct entries for Hawaiian, English and botanical names.

W. Arthur Whistler's book ***Polynesian Herbal Medicine*** was reviewed in detail by J.I.F. Reppun MD in the June 1993 issue of the *Hawaii Medical Journal*. Although Dr Whistler's opinions on the history of herbal medicine in Polynesia differ significantly from those expressed by Drs Abbott and Krauss, this book is a useful companion to their books. The first section presents an overview of the history and culture of Polynesia and is followed by chapters on traditional medical practices within individual cultures. These chapters focus on the contemporary practice of traditional herbal medicine and the variation in this practice throughout Polynesia. The second part of the book contains details on 90 plants used for healing in Polynesia. The entry for each plant includes the scientific, English, and various Polynesian names, a description of the plant, its distribution and its medicinal uses and is accompanied by a color photograph by Dr Whistler. These high-quality photographs are the highlight of this book. There is no subject index in *Polynesian Herbal Medicine*; there is, however, an index to scientific names of medicinal plants including synonyms, and a separate index of the Polynesian names of these plants.

Each of these books represents a unusual perspective on Hawaiian healing plants and makes it's own contribution to our appreciation of the interdependence of these plants and Hawaiian people. Both Drs Abbott's and Krauss's books provide excellent general overviews of Hawaiian ethnobotany. Dr Whistler's book is highly recommended for its outstanding photographs.

Reviewed by Eileen Herring

■

Mahalo to Eileen Herring for reviewing three of our classic Hawaiiana books. These references, as well as other related books, are available at the Hawaii Medical Library. While you are in the Library, be sure to visit the *Mala Laau*—the Garden of Hawaiian Healing Plants. Our garden is now so blessed, it is fast becoming a "jungle."

Eileen Herring is an archives and reference librarian in the medical library. She is also an entomologist and horticulturist, and was very influential in the planning and operation of our *Mala Laau*. She is fantastic at medical literature seraches—in the library stacks and with the computer data bases. Thank you for all of your help, Eileen.—ED







"...a pepperoni double cheese. I'll fax you a map for directions."

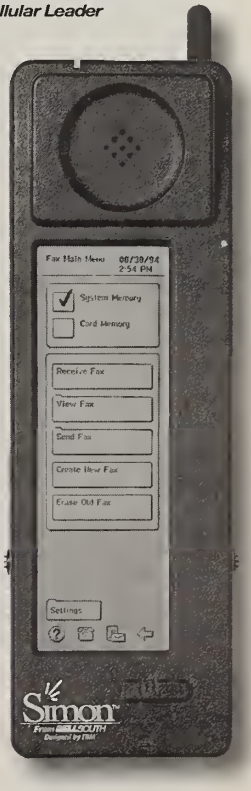
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Hawaiians and Medicine*

George H. Mills MD**

The study of injury and illness could be utilized as one approach for a presentation dealing with Hawaiians and medicine, since wars and accidents were much more common in early Hawaii than bacteria, viruses, and inappropriate food.

A second convenient approach would be to divide the presentation into two periods—pre-Cook and post-Cook.

A third approach would be to study the Polynesians and medicine from the time of their arrival in these Islands around 500 AD to the lifting of the *kapu* in 1819, followed by the post-*kapu* era.

In this presentation, I will provide a chronological sketch of the development and progression of health care from the time of Cook's arrival to the 1900s. I will identify the impact of new religion, economics, and politics that precipitated new illnesses, and the severe stress and strain of change to which the Hawaiians had to adjust.

Dr Bushnell has described the *kahuna lapaau*, one of the most important individuals in pre-Cook Hawaiian culture.

Captain Cook Arrives

On Sunday, January 18, 1778, Captain James Cook's ships, *Resolution* and *Discovery*, sailed past Waialua and Waianae on Oahu and dropped anchor at night off Waimea, Kauai. It is said he accidentally ran into the Hawaiian Islands and, in doing so, he broke 500 years of isolation of these Islands from the rest of the world. He and his crew were the first white men to visit Hawaii.

In his journal he wrote:

"The order not to permit the crews of the boats to go on shore was issued that I might do everything in my power to prevent the importation of a fatal disease into this Island which I knew some of my men labored under and which, unfortunately, had been already communicated to other Islands in these seas."

This order could be looked upon as the first act embodying concepts of Western medicine and preventive medicine in Hawaii.

However, subsequent action by the crew could be looked upon as the first violation of a public health order in Hawaii. Cook's orders were pertinent but poorly enforced. Consequently, during their short stay at Kauai, accounts indicate the first introduction of Western disease in Hawaii. Cook left the flea, syphilis, and other venereal diseases on Kauai. He then left Kauai, sailing to the northwest through the Bering Strait, returning to Hawaii without finding the northern passage to the East, for which he had been searching as the emissary of the Royal Scientific Society of London.

Kalaniopuu, High Chief of Hawaii, now held the northeast end of Maui after one of many battles with *Kahekili*, High Chief of Maui. Kalaniopuu dispatched several canoes to the visiting ships. Some claim that Kalaniopuu was already concerned about the problems of the new diseases reported from Kauai.

Off-Shore Health Inspection

The boarding party is believed to be the first off-shore health inspection conducted in Hawaii. *Kamehameha*, a young but already highly skilled and respected warrior, was a member of Kalaniopuu's boarding party.

After two days at Wailua, Cook sailed away from Maui down the northeast coast of Hawaii around *Kalae* (southpoint) to *Kealakekua*.

In the 40 years, 1779 to 1819, following Cook's visit, explorers, whalers, traders, and deserters all contributed to the insult on the Hawaiians. Don Francisco De Paula Y. Marin, the Spanish immigrant who became physician to Kamehameha I, estimated that, by 1819, disease, war, and famine had killed 150,000 Hawaiians. This was one-half the entire population estimated by Cook in 1778.

Kamehameha I, who led the Islands for the decade before his death, died May 14, 1819. He left 9 wives and 24 children that are recorded.

When he was 5 years old, *Liholiho*, Kamehameha's oldest son by *Keopuolani*, was identified by him as successor to the kingdom. On May 21, 1819, Liholiho, age 22 years, assumed the responsibility as Kamehameha II.

Kaahumanu, Kamehameha I's favorite and most powerful wife, supported Kamehameha II and became his regent and chief counselor. Kaahumanu was childless.

Kapu Broken

A few months after Kamehameha's death, encouraged by Kaahumanu, Liholiho, with his mother, Keopuolani, sat and ate with the women at a huge feast. The food *kapu* was broken. Women could now sit and partake with men of the food that had been *kapu*. There was mixed reaction to this change. Some were jubilant; others, very angry.

This change may not have been as severe as one would think, for, as an example, in the past, food *kapu* for women had been lifted for a few days or weeks following the death of a ruling chief. A few months later, as part of the continued rejection and the effort for emancipation from these strict *kapu*, the temples *(heiau)* were destroyed, the *kahuna* were driven from the*heiau*, and their power to declare *kapu* and make offerings was gone.

The Hawaiians had lost the source of their exacting discipline—many experienced mental and spiritual bewilderment.

On April 4, 1820, after a trip of 164 days and 20,000 miles, the *Thaddeus* arrived at Kailua-Kona with the first company of missionaries, which included the first resident medical doctor, Thomas Holman, and his wife.

*Reprinted from the *Hawaii Medical Journal* October 1981;40:272-276.

**Presented at the 21st Annual Convention of the Association of Hawaiian Civic Clubs held at Wailua, Kauai, 1980.

The missionaries had been instructed before they left Boston that theirs was a mission of mercy, a labor of love. They were to abstain from interfering with local political interests, and they were to inculcate duties of justice.

First Missionary Physician

On April 24, 1823, three years after the arrival of the first company, the second company of missionaries arrived and included a doctor, Abraham Blatchley. Dr Blatchley was sensitive to the devastation caused by smallpox in the rest of the world, and soon after his arrival, tried in vain to obtain vaccine from London's inoculation hospital, the only source in the world.

Dr Blatchley's request could not be filled. Distance placed London one to two years of travel time away from Hawaii, and sterile containers had not been developed to keep the vaccine pure and uncontaminated.

In 1823, Kamehameha II and his wife, *Kamamalu*, left Hawaii for a trip to England. The king and queen and several of their party contracted measles. Kamamalu died in London on July 8, 1824, and Kamehameha II died five days later. Londoners questioned why such robust natives should die of measles, and the frail, debilitated London women could survive.

Kamehameha III, *Kauikeaouli*, brother of Kamehameha II, assumed the role of king. He was 11 years old, and was to reign the longest of any Hawaiian monarch, from 1824 to 1854.

Gerrit Judd and the Mosquito

In 1828, Dr Gerrit Parmele Judd arrived with the third company of missionaries. Shortly after arriving, he was asked to go to Lahaina to look at a strange new *itch* that was spreading among the people. He examined the rash and concluded that it was the result of the bite of the night mosquito. Further study revealed that this mosquito was now a resident of Hawaii since crewmen from the ship *Wellington* had emptied and cleaned their water barrels, which were found to contain mosquito wigglers.

Over the years we have been fortunate in Hawaii not to have malaria. There has never been a sufficient number of malaria mosquitos or enough people carrying the organism to make this a public health problem. However, we do not have the anopheline mosquito and the malarial plasmodium. This means that, all conditions being right, we do have the potential for malaria.

In May 1831, Kaahumanu, at 58 years of age, expired at her home in Manoa Valley. She was certainly one of the most powerful and influential Hawaiians during the period from the time of Captain Cook's arrival to present-day Hawaii. Subsequent to her death, Hawaiian history reveals the immediate impact of the loss of her direction.

A report in the year 1836 indicated that imported diseases continued to take their toll. In the total population of the Islands, we had 107,954 residents—Hawaiians, 107,354; non-Hawaiian, 600. Of the total number of Hawaiians estimated by Cook in 1778, 60 years later, we now have 35% left.

The Yellow Flag

On August 1, 1836, a document directed to the Honolulu Harbor Pilot, signed by *Kinau* and *Auhea*, wives of the late Kamehameha II, and *Paki*, his father-in-law, directed the following:

"You are hereby directed, previous to boarding any vessel from the northwest coast of America, and other vessels generally, to ascertain whether there has been any case of smallpox or other pestilent disease, on board such vessel for the previous 42 days. If there should have been, you are hereby forbidden to go on board such vessel, or to suffer any of your boats' crew to go on board, but to conduct such vessel to a convenient anchorage, and direct the master to hoist a yellow flag (with which you will be furnished by us), at the main, and immediately give information to the constituted authorities.

"Any person neglecting these regulations will be severely punished. And vessels not conforming to the above, shall be driven from our shores."

On February 17, 1837, less than a year later, the ship *Quixote* arrived in the port of Honolulu and was identified as the source of a severe mumps epidemic that lasted through 1838. Although the disease was debilitating and incapacitating, very few died. However, on April 4, 1839, this disease took the life of Premier Elizabeth Kinau at age 35.

High Infant Mortality

By 1838, there was growing concern about the high infant mortality rate. It was pointed out that half of the infants died under 2 years of age—most between 6 and 12 months. Very few who survived the first two years died in early childhood. Causes of death have been attributed at this point to poor clothing, improper food, dropsy, and diarrhea. An example for this concern was the report of a woman who was delivered of 21 children and only one remained alive.

Early writings likewise point out that Hawaiians practiced infanticide for multiple reasons. This certainly contributed to the infant mortality rate.

On May 29, 1839, by royal proclamation, Kamehameha III ordered the governors of all the Islands to appoint boards of health. These were instructed to inspect all incoming ships since it was discovered that smallpox was present on those incoming ships, and the document signed by Kinau and Paki in 1836 was not being enforced. Although this was a major step in the right direction, these boards of health functioned poorly and were not funded.

An interesting medical report during this year revealed that Amos Starr Cook of the royal chiefs' children's school was on a trip to Waialua, Oahu, when he fell from his horse and dislocated his shoulder. After several bleedings, the first which caused him to faint, and 3 1/2 hours of pulling by Dr Judd and his assistants, the dislocation was reduced. A very tired Cook, 12 hours later, was carried back to Honolulu, having a great deal of pain.

Punahou School was founded in 1841 in lower Manoa Valley on land given to Rev and Mrs Bingham by *Liliha*, wife of *Boki*, Governor of Oahu.

Breast Surgery, No Anesthesia

Kapiolani, who had defied *Pele*, died this year about six weeks following surgery for cancer of the breast, performed without anesthesia. (General anesthesia with ether was to be successfully performed in Boston some five years later.) This episode in Hawaiian medicine was significant, not only because surgery was performed without anesthesia, but the wound healing described as being excellent and free of infection. Her death was attributed to erysipelas of the brain—unrelated to her cancer or surgery.

In 1845, Dr Dwight Baldwin of Lahaina described the first case of leprosy in Hawaii, a disease we will consider in more detail later.

Of great medical and public health significance at this point was the fact that 600 whaling ships and 30,000 crew members

wintered in Hawaii this year of 1845. Lord knows the medical problems related to this evidence of Hawaii's hospitality.

In October 1848, the ship *Independence* entered the port of Honolulu seeking food and water to replenish its stores. They gifted Hawaii with measles and whooping cough. Reports reveal that nearly every child born that year died of the complications of two diseases, which were new to Hawaiians. This pressured Dr T.C.B. Rooke, port physician, to enforce the regulations established in 1836 and 1839.

A census at this time now revealed a total population of the Islands of 84,165—82,035 Hawaiians, 558 part-Hawaiians, 1,572 non-Hawaiians. In 70 years since Cook's arrival the Hawaiian population had decreased 70%.

In 1849, the gold rush in California brought *gold fever* even to Hawaii. The demand for food and goods in the Islands was high. Basic foods were difficult to obtain and prices had increased tremendously. Both affected significantly the nutrition of the Hawaiians.

The Public Health Effort

By 1850, Honolulu had been designated the capital of the kingdom. Kamehameha III officially established the Department of Health during this year, thus making this unique department 130 years old. Only two years before this, the public health effort had been established as a government function in England. Five years later, in 1855, the first American department of health was established on the continent, in Louisiana.

During the 1850s, health laws were established by the legislature that identified who could be licensed to practice medicine and prescribe drugs, and the Hawaii Medical Association was chartered by the King, making this association 125 years old.

In 1852, indentured Chinese laborers brought with them the habit of opium smoking. In an attempt to control the spread of the habit and to accommodate those who were already on the drug, a law was passed that provided for the licensing of three physicians—two in Honolulu and one in Lahaina—allowing them to prescribe opium. Each of the three licenses cost $2,000.

In 1856, a law was passed to license 14 *kahuna*. This action upset the physicians.

Smallpox Arrives

In spite of the ship inspection order of 1836, boards of health on each Island, and the establishment of a kingdom-wide department of health in February 1853, it was in this year that the first case of smallpox was diagnosed in Honolulu. The virus was introduced into Hawaii by the crew of the ship *Charles Mallory* out of Boston. By April, smallpox had spread and the epidemic was raging. On Oahu, with a population of 19,126, there were 9,082 cases and 5,748 deaths. There was no control of the disease, no nurses, and no hospitals for the ill.

Hawaii was to experience three more smallpox outbreaks—in 1861, 1873, and 1882. The last outbreak was introduced by the crews of five tramp steamers. There were 282 deaths; this in spite of the fact that early in 1854 the legislature had made smallpox vaccination mandatory.

Because of political unrest, the devastation of the smallpox epidemic, compulsory smallpox vaccination, and badgering by business because of the loss of dollars due to quarantine and port control, Dr Judd was urged to retire from his responsibilities in the government of Kamehameha III. The *White King* was gone.

On December 15, 1854, Kamehameha III collapsed and died. His death was attributed to extreme worry in his last few years. Problems with land, taxes, disease, and local and international politics, involving France, England, and the United States, were extremely burdensome. Especially bothersome to Kamehameha was Lord Paulet's taking of Hawaii in the name of the queen of England, even though the Hawaiian monarchy was restored shortly after by Admiral Thomas. From this resulted the service of Thanksgiving at Kawaiahao Church, where the king uttered the words that later became the motto of Hawaii: *Ua mau ke ea o ka aina ika pono.*

On July 4, 1854, a statehood parade was conducted in Honolulu. A float carrying 32 girls of American parentage was followed by a young Hawaiian girl representing a potential new state.

Early in 1855, at age 21, Alexander Liholiho became the ruling monarch, Kamehameha IV. He was Christianized and sanctified at the pulpit of Kawaiahao Church. Later, on June 19, 1856, he married Emma Rooke, the adopted daughter of Dr Thomas Rooke, an English physician residing in Honolulu. Kamehameha IV was Hawaii's first English-speaking Christian monarch.

Liholiho complained to the legislature about the high infant mortality rate, which was attributed to malnutrition and intestinal problems. He was also concerned about the high sterility rate among Hawaiian men and women, which was believed to be due to venereal disease. His primary concern, however, was that Hawaii had no hospital for his people.

No money came from the legislature in response to his plea for a hospital. On May 20, 1858, Liholiho and Queen Emma raised $13,000 and the legislature finally provided $7,000. Some two years later, the cornerstone was laid for the 176-bed Queen's Hospital.

On November 30, 1863, Kamehameha IV died of a stroke; he was 29 years old. He had been very instrumental in establishing laws to regulate the practice of medicine, the prescription of drugs and, with his wife, had established the first private general hospital in Hawaii—The Queen's Hospital.

Kamehameha V assumed the rule of reigning monarch in 1864. His major contribution to health care was his interest in the isolation and treatment of leprosy.

In 1865, Dr Dwight Baldwin, the physician at the Missionary Station at Lahaina, had described the first case of leprosy in Hawaii. This case involved a high chief and his cohorts. In the next few years, leprosy was described on all the Islands and grew in significance as a major public health problem which almost exclusively involved Hawaiians.

Isolated at Kalaupapa

On January 3, 1865, during the second year of his reign, Kamehameha V signed the segregation act which was directed at isolating the lepers at Kalaupapa. At the outset this act was poorly enforced. Later that year, a receiving hospital for the isolation of patients with leprosy was established in lower Kalihi near the sea. On January 1, 1866, the first patient was admitted to the facility at Kalaupapa.

Seven years later, the first permanent Caucasian resident arrived at Kalaupapa—Father Damien. He spent the balance of his life ministering to the lepers, but died himself of the disease after 16 years of devotion.

In December 1881, there were 653 active cases in the settlement and an estimated total of 1,000 cases in the territory.

Recently in Honolulu, an international conference on leprosy was convened for five days. Some interesting statistics were presented, and I would like to share them with you (Table 1). Today leprosy can be controlled and can be cured with correct treatment and follow-up. In 1872, the biennial report of the

Table 1.—Number of New Cases of Leprosy

	New Cases	Filipino	Samoan	No Amer	Hawaii Born	
1977	27	15	8	1	3	
1978	31	16	10	1	3	1 Fil-Hwn 1 Chn-Hwn
1979	33	24	5	3	1	
1980*	29	20	5	2	2	1 Pt Hwn 1 Hwn

*To Oct

Number of New Cases in Hawaii	
1886 to Oct 1980	4,658

National Ranking of States—New Cases	
1 California	58
2 Hawaii	29
3 Texas	–

president of the Board of Education noted that "dollars voted for the medical instruction of Hawaiian youth has been expended for that purpose." Ten students of chiefly status were enrolled. This action fulfilled a lifelong desire of Dr Gerrit Judd to teach medicine to the Hawaiians so that some would become doctors. He had written the first anatomy book in Hawaiian, published by the press in Lahaina.

Kamehameha V died on December 11, 1872. He was a bachelor who left no issue. Princess Pauahi refused the throne; the Kamehameha dynasty was at its end.

For the next 20 years the Hawaiian government reflected instability and lack of strong continuous leadership. In 1873, Lunalilo, the highest surviving chief, was elected by the legislature as king. He reigned for a very short period to December 1873 when he died of tuberculosis, which he had for several years.

David Kalakaua was then elected by the legislature to assume the crown after a bitter election wherein he defeated Dowager Queen Emma. He was highly motivated to return Hawaii to the Hawaiians, but he succumbed to pneumonia late in 1891 in San Francisco without accomplishing this mission.

In 1891, Queen Liliuokalani, Kalakaua's sister, assumed the leadership of the Hawaiian government by directive of Kalakaua. She, in turn, named Princess Kaiulani as her successor. She, like Kalakaua, wanted to see more of her people, "more browns" in her government.

In 1893, a provisional government was established which deposed the Queen because of the concern regarding her anti-white actions. Dole, Smith, King, Jones, and Hall took over the government without bloodshed.

On August 5, 1885, three crew members arrived in Honolulu on the steamship *Belagic* out of Yokohama. They were infected with cholera and were responsible for starting an epidemic that involved 87 cases and resulted in 64 deaths. During this epidemic several nurses treating the patients also died. The dock-front water and the fish were contaminated.

In 1896, a census revealed 8, 485 Hawaiians and part-Hawaiians, 22,438 Europeans, and 47,078 Asiatic laborers.

By 1898, Hawaii had renounced its sovereignty form of government and became a republic.

The Plague

About a year later, the bubonic plague broke out in Chinatown. Houses were fumigated with sulfur and sprayed with bichloride. All infected houses were burned. There were 71 cases and 61 deaths. Although dissected rats showed signs associated with the plague, and cockroaches and bed bugs were killed with the fumigation and spraying, there were no accounts of any dead fleas or association of the flea with the rat and plague. Burning of the contaminated houses set off a massive uncontrolled Chinatown fire which cost the government $1,500,000 in reparations.

The year 1900 initiated the beginning of what we accept now as modern medicine. Public school children were examined for contagious diseases. Tuberculosis hospitals were established. Garbage collection and burning was instituted. The first public health nurse was employed and the first medical group practices and clinics were established.

Hawaii had taken its place in the world of progressive medical service to its people.

In conclusion, I would like to share with you what I believe are a few of the most significant actions and events in the evolution of Hawaiians and medicine.

In 1788, with the coming of Captain Cook, the Hawaiians mistook the arrival of the first white man as a return of their god *Lono*. The Western diseases foreigners brought to the Islands devastated the Hawaiian civilization by killing off half the population within the next 40 years.

The year 1819 was the death of the brilliant and powerful Kamehameha I and the elimination of the *kahuna* and the *kapu*. The Hawaiians had lost their traditional source of exacting discipline, which resulted in their experiencing great mental and spiritual bewilderment.

During the 1830s the *haole* and Hawaiian leaders had to accept the reality that foreign disease would kill them off if not controlled at the source. Royal orders for ship inspection were poorly instituted and did little to stem the tide of rapid erosion of the Hawaiian population.

During 1850 to 1870, epidemics of influenza, measles, mumps, whooping cough, scarlet fever, and smallpox killed thousands of Hawaiians, and leprosy was diagnosed on all the major islands. Laws were established by the legislature that required physicians and a limited number of *kahuna* to be licensed to practice their profession. Drugs, including a limited amount of opium, could be dispensed legally. The segregation act for lepers was signed by Kamehameha V.

By 1870 to 1890 the last of the Kamehameha dynasty had served his people. Kamehameha V was dead. Much of the *mana* was slipping away. Leadership was no longer provided by the strong and proud Kamehameha bloodline. Leadership was now obtained through the elective process by the legislature. The unity of purpose which had existed between the Hawaiian chiefs and the *maka ainana* had slipped away. Almost total annihilation of the Hawaiian race by foreign disease contributed to this loss of power.

By the 1900s, the Hawaiians were forced to renounce their sovereignty. The republic had been established, and with this came a clear shift of power and politics to that of the non-Hawaiian Western culture.

The practice of medicine followed the political example and became dominated by the same non-Hawaiian Western influence to the degree that there are only vestiges of the once highly developed pre-Cook medical discipline.

Yet the Hawaiian people themselves have managed to evolve from their totally isolated, delicately balanced eco-system—through the fatal impact with the outside world, where their numbers dropped to critically low levels and near extinction—to the present, where possibly the admixture of other bloods has given them the strength to more clearly identify their own heritage.

The future looks promising, so *keep healthy, Hawaiians!*

Diabetes Mellitus and Heart Disease Risk Factors in Hawaiians

The Native Hawaiian Health Research Project, RCMI Program*,**

Introduction

Native Hawaiians have the highest mortality rate among the 5 major ethnic groups in Hawaii and the lowest life expectancy among its multiethnic population.[1] Heart disease is the leading cause of death among the people of Hawaii and accounts for greater mortality among Hawaiians than non-Hawaiians, especially among men. In addition, the occurrence of heart disease is estimated to be 44% greater than the national average and affects Hawaiians at a younger age than non-Hawaiians.[2]

The collective interpretation of the vital statistics data strongly suggests that heart disease occurs disproportionately among Hawaiians and contributes to a shorter life expectancy. Despite these troubling figures, accurate prevalence rates of abnormalities of the risk factors for heart disease in Hawaiians are not available. Thus, there is a need to ascertain cardiovascular disease (CVD) risk-factor data among Hawaiians. Such information will allow a more focused effort to prevent heart disease morbidity and mortality.[3]

Guidelines have been established to address major risk factors such as hypertension, hypercholesterolemia, smoking, and diabetes mellitus in an effort to reduce atherosclerotic heart disease. Legislators and funding agencies often ask why there is a need to gather data on Native Hawaiians if control of the major CVD risk factors is already emphasized in clinical practice for Hawaii's multiethnic population. The answer lies in the disproportionately high prevalence of heart disease morbidity and mortality among Hawaiians. In addition, the pathophysiology of atherosclerosis and CVD is exceedingly complex and involves many factors other than those typically labeled major risk factors. Thus, factors ranging from socioeconomic status to genetic background may affect susceptibility to heart disease. The prevalence of abnormalities in CVD risk factors has been found to differ among various populations around the world. Native Hawaiians may possess unique risk-factor profiles of the major contributing disorders or may exhibit a high prevalence of newly identified risk factors such as insulin resistance and elevated fibrinogen levels. The accurate and complete determination of CVD risk-factor rates will provide analysis of the magnitude of these risks among Hawaiians. This information will allow primary care providers to focus resources on the most important of these risk factors. More important, accurate information will provide funding bodies and health agencies with data on which to target their education and awareness programs to prevent the development of these risk factors in future generations of Hawaiians. In addition, the risk factor assessment may potentially allow for the understanding of nonclinical factors, such as cultural identity and social support, that are important in heart disease reduction. Finally, the information gathered has the potential for providing a foundation on which the true attributable risk can be determined for various CVD risk-factor abnormalities in Hawaiians.

This article will provide a review of information currently available on diabetes mellitus and heart disease risk factors in Native Hawaiians and an overview of the Native Hawaiian Health Research (NHHR) Project, a CVD risk factor assessment effort. The NHHR Project is a community-based project, and the process of developing a community partnership for a research effort is highlighted. Also, initial preliminary data from the NHHR Project is presented. The contributors who authored sections of this article are noted and the members of the NHHR Project are listed with an asterisk.

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Diabetes and Cardiovascular Disease Risk among Hawaiians

Marjorie Mau MD and Richard Arakaki MD

The primary form of diabetes mellitus (DM) affecting Native Hawaiians is Type II or non-insulin dependent diabetes mellitus (NIDDM). One of the earliest publications on the prevalence of DM in Hawaiians living in Hawaii is a study of approximately 38,000 gainfully employed individuals between 15 and 65-plus years of age on Oahu. In this study, the prevalence of DM among Native Hawaiians (pure and part-Hawaiians) was reported as 29.9/1000, which is significantly higher than the total study population (18.4/1000).[4] Moreover, among pure Hawaiians, the age-adjusted prevalence rate was reported to be 48.8/1000, the

highest for any ethnic group examined. This study suggests that among Hawaiians, particularly pure Hawaiians, DM is highly prevalent. Further supportive evidence was provided by a study of 30 volunteer men on Niihau who were of pure Hawaiian ancestry and were 22 to 64 years of age. Based on fasting glucose levels, the study reported a crude DM prevalence rate of 120/1000. In 1985, the Molokai Heart Study conducted CVD risk factor examinations among 257 residents between the ages of 20 and 59 living on Hawaiian homestead lands on the island of Molokai.[6] In this population-based study, the presence of glucose intolerance was defined as a previous history of diabetes or the presence of 2+ or greater glycosuria. The age-adjusted prevalence of glucose intolerance was reported to be 10% in women and 12% in men. These rates are approximately 4-fold higher than the rates for U.S. white women and men of similar ages.[7] When compared to other at-risk ethnic populations, the prevalence of glucose intolerance reported in the Molokai Heart Study is equal in magnitude to Native Americans living in Tucson, Arizona, and approximately 2.5-fold higher than the U.S. population.[8-9] Concordant with DM prevalence among Hawaiians reported in the Molokai Heart Study is the age-adjusted DM mortality rate, which in 1985 was reported by the Hawaii Health Department to be 29 per 100,000. Compared to the general U.S. population, the DM mortality rate among Hawaiians is 2-fold higher.[10-11]

The prevalence of other CVD risk factors in Hawaiians can be estimated from collected data from the Molokai Heart Study. Based on anthropometric measurements the prevalence of obesity, defined as a body mass index (BMI) greater than 27.5, was reported as slightly more than 60% in both men and women, with approximately 40% of the study cohort being severely overweight defined as a BMI greater than 31.1 in men and 32.2 in women.[12] These prevalence rates for obesity are quite high as compared to the national average, especially among younger Hawaiians in the 20 to 40 age group. Body fat distribution, as measured by waist to hip circumference ratios (WHR) independent of obesity, further categorizes individuals at risk for atherosclerotic vascular disease. In the Molokai Heart Study, a high WHR was measured in both men and women, indicating an increased central or visceral fat distribution and hence an increased risk for noninsulin-dependent diabetes mellitus (NIDDM) and CVD.[13] The prevalence of hypertension (HTN) among Hawaiians in the Molokai Heart Study was found to be comparable to rates reported for U.S. whites.[6] Approximately 24% of women and 26% of men between the ages of 20 and 59 were noted to have HTN. However, individuals in the 40 to 49 age group had approximately 40% prevalence as compared to the 30% rate among U.S. whites.

Biochemical analysis of random blood samples for total cholesterol concentrations among Hawaiians in the Molokai Heart Study revealed that nearly 50% of individuals had levels greater than 200 mg/dl.[6] In addition, the mean HDL-cholesterol levels in Hawaiian participants was reported to be substantially lower than the national average. Cigarette smoking among Hawaiian participants had been found to be slightly more frequent than the national average at approximately 34% for women and 42% for men.

The prevalence of heart disease risk factors in Hawaiians appears to be higher than the national average, especially diabetes mellitus and obesity. Because of certain limitations in the various studies reviewed, the data on CVD risk factors in Hawaiians remain incomplete. However, the previous studies clearly underscore the need to conduct a more complete and accurate assessment CVD risk factors in a representative population of Native Hawaiians across the state of Hawaii.

The RCMI Program as a Mechanism in Establishing the Native Hawaiian Health Research Project: A Community-Based Research Effort

Healani Chang MPH, Danelle Coakley

The NHHR Project is funded by the Research Centers in Minority Institutions (RCMI) Program of the National Centers for Research Resources of the National Institutes of Health. The goal of the RCMI Program is to significantly enhance the capacity for predominantly minority institutions to conduct biomedical and behavioral research. The RCMI program awards grants to institutions to help acquire, enhance, and support the various physical and human resources needed for conducting competitive biomedical research. The University of Hawaii at Manoa instituted the RCMI Program in the Pacific Biomedical Research Center (PBRC) in 1986. In 1990, the RCMI Program fostered the Native Hawaiian Health Research Project in an effort to fulfill a University of Hawaii mandate for clinical research initiatives to benefit the citizens of Hawaii.

The development of the NHHR Project also coincided with a unique opportunity to link research on chronic diseases that disproportionately affect Native Hawaiians, with health care services provided under the Native Hawaiian Health Care Act of 1988. The NHHR project of the university's RCMI Program is working in concert with *Papa Ola Lokahi*, a community-based Hawaiian organization, to address health care promotion, disease prevention, and primary health care services for the Hawaii's indigenous Hawaiian population. Thus, the NHHR Project is a community-based initiative to gather more complete and accurate information on glucose intolerance and cardiovascular risk factors in the Hawaiian population. The guiding principle of this project is a cultural-historical understanding and sensitivity to Native Hawaiian communities, and research initiatives that are culturally consonant with the values, beliefs, and practices of Hawaiians. The continuing goal of this activity has been to improve the health status of Native Hawaiian communities by forming partnerships between the community, their health care professionals, the University RCMI researchers, and *Papa Ola Lokahi*.

The specific aim of the NHHR Project is to collect standardized information on the distribution of risk factors for cardiovascular disease in a representative population of adult Hawaiians. The objectives are to determine the prevalence of impaired glucose tolerance and to characterize the smoking behavior, the distribution of serum total cholesterol, HDL-cholesterol and triglyceride concentrations, blood pressure, correlates of adiposity, and insulin levels in the Hawaiian population.

In order to determine the prevalence of any disorder in a given population, a well-defined geographic location and population census is needed first. A community with a large number of Hawaiian residents was required to conduct this project. However, embarking on such a research effort within a community requires a commitment to improving health care regardless of the constraints of budget and limitation of services. Thus, the NHHR Project sought a partnership with a health care organization that would provide support and services to the participants in the study, especially those identified with abnormalities. At the urging of *Papa Ola Lokahi*, the separate Native Hawaiian Health Care organizations of each island were contacted and the research project presented. These 5 uniquely created and defined Native Hawaiian Health Care systems are: *Hoola Lahui Hawaii* representing Kauai and Niihau; *Ke Ola Mamo* representing Oahu; *Na Puuwai* representing Molokai and Lanai; *Hui No Ke Ola Pono* representing Maui; and *Hui Malama Ola Na Oiwi*

representing the island of Hawaii. Each entity has the responsibility of addressing the health care needs of the Hawaiian people it represents. Studies were begun in cooperation with *Hoola Lahui Hawaii* and *Hui Malama Ola Na Oiwi*. The research on Kauai was interrupted by hurricane *Iniki* and is resuming only now. The community of North Kohala has been the focus of research on the island of Hawaii.

A Profile of Research in the North Kohala Community

Kohala is one of the 6 major districts that make up the island divisions of Hawaii. North Kohala is made up of 1,020 square miles within 2 major environmental zones: Windward and leeward. The Kohala mountains form this natural separation allowing Kohala to experience a great variety of environmental conditions. Historically, North Kohala was populated by migrants from Tahiti and is the legendary site of the Kamehameha royal blood line.

After initial contact with the West, missionaries subsequently settled in Kohala where today several congregations still thrive. Originally a subsistence economy, the sugar industry changed this and it became the primary economic presence in Kohala for nearly 100 years. Today Kohala is dependent on the tourist industry concentrated along the South Kohala coast line with its 5 major hotel conglomerates. Community and lifelong residents have expressed their concerns that Kohala is once again in transition, following a closure of one major industry, the sugar mills, and the resurgence of the growing tourist industry and hotel developments. For a changing community, the RCMI project provides a sense of hope to introduce new health-related skills and knowledge in an effort to meet the challenges of the future with a healthier generation of people.

The initial census collection required hiring key community liaisons and up to 12 census takers. The census survey had been a critical step in the building of a community partnership. Highly motivated and active residents conducted a door-to-door census to determine the size of the entire population (Hawaiians and non-Hawaiians) of North Kohala. They assisted in enumerating Hawaiian families living in North Kohala and in identifying the number of adults residing in each household.

A notable benefit of working with existing community organizations was the fortunate event of establishing a collaborative partnership with the local fire department. Firefighter Michael Moriarty and the Kohala Senior Citizen Club created a computerized mapping system to expeditiously locate Kohala residents in emergency situations. The system was called the "The Kohala Dispatcher." With the sytem nearly 80% complete, the RCMI program contributed with additional staffing and together was able to refine and complete the Kohala Dispatcher system.

The census took longer than expected because most census workers had other priorities—their primary employment responsibilities and family commitments. However, we had counted nearly 80% of the population in North Kohala by the end of 1993.

Concurrent with the census collection, the RCMI program had established a research clinic site in the heart of Hawi Town, an ideal location for screening community members for the project. The clinic was subsequently staffed by 2 health technicians and a community coordinator. They received rigorous training in research methods by the core RCMI investigators and assisted in pilot testing the health behavioral questionnaires with neighboring residents.

Methods

Preliminary Results of the Native Hawaiian Health Research Project

Andy Grandinetti PhD, Healani Chang MPH

Subjects.—This study received approval from the University of Hawaii's Committee on Human Studies, the North Kohala Advisory Board, and the *Hui Malama Ola Na Oiwi* Advisory Board. Approximately 521 Hawaiian individuals over the age of 30 were identified in the census survey which was estimated to enumerate 80% of the population of Hawaiians in North Kohala. Once Hawaiian families were identified, individuals were mailed an invitation to participate and were subsequently contacted by phone to schedule a time to conduct an interview, examination, and blood sampling. All screening protocols were performed at the research site in Hawi beginning in early 1994. Every participant received a detailed explanation of the procedures involved, the risks and benefits, and issues of participant confidentiality related to the research project. An informed consent was obtained prior to the start of the screening protocol. Pregnant women were excluded from the screening.

Questionnaires and Anthropometric Measurements.—A detailed, self-reported ethnic genealogy was obtained to ascer-

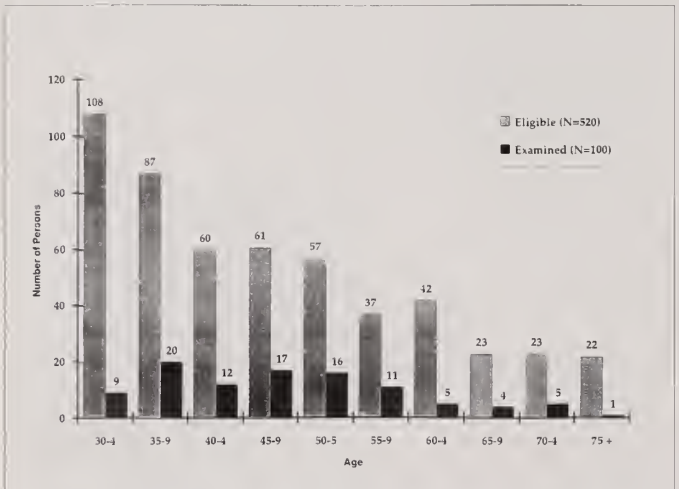


Fig 1.—Age distribution of eligible persons and participants in North Kohala.

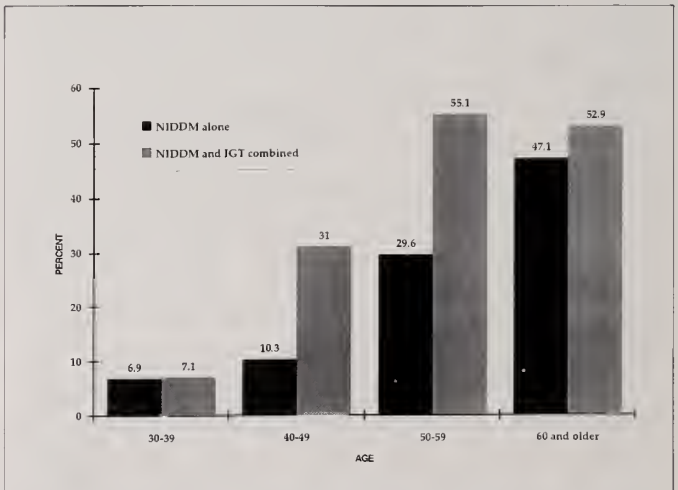


Fig 2.—Age-specific prevalence rates for glucose intolerance among Hawaiians in North Kohala.

tain Hawaiian admixture. Current and past cigarette-smoking history was obtained. Questionnaires about dietary and physical activity history were answered. The food-frequency questionnaire developed by Dr Jean Hankin and validated for other populations in Hawaii was utilized.[14] The physical activity questionnaire was an adapted version of a validated tool used in the Pima Indian studies.[15]

Blood pressure, height, weight, and waist and hip circumferences were obtained in triplicate by standard protocol.[16] Body mass index (BMI) was derived by dividing the mean weight in kilograms by the mean height in meters-squared (Kg/M^2). The waist to hip circumference ratio (WHR) was calculated by dividing the mean waist circumference by the mean hip circumference.

Oral Glucose Tolerance Test.—All individuals scheduled were instructed to maintain a normal diet for 3 days and to fast for 12 to 14 hours prior to the examination. A fasting blood sample was collected which was followed by ingestion of 75 grams of dextrose. Two hours following the oral glucose load, a second blood sample was obtained. Only a fasting blood specimen was obtained on known diabetics (prior history, medication, or a glucose by fingerstick of > 225 mg/dl), and a glucose challenge was not given. All blood samples were rapidly processed by centrifugation and plasma samples were aliquoted in to separate cryotubes. Separate aliquots of plasma were then sent frozen and refrigerated to the research laboratory in Honolulu weekly.

Biochemical Analysis.—Plasma glucose levels were measured by the glucose oxidase method using an autoanalyzer from Yellow Springs Instruments (Yellow Springs, Ill).[17] Plasma total cholesterol, HDL-cholesterol, and triglycerides concentrations were analyzed by beta-estimation and performed by Penn Medical Laboratories of the Med-Atlantic Research Institute, a certified CDC Lipid Research Laboratory in Washington DC.[18] Plasma LDL-cholesterol levels were estimated by calculation using the Freidewald equation.[19]

Statistical analysis.—All variables examined and collected for each participant were analyzed using the SAS (Statistical Analysis System) JMP program procedures. Descriptive statistics such as the mean, standard deviation, and range of different measurements for various anthropometric and biochemical measurements were generated using this program.

Results

Of the 521 eligible adult Hawaiian residents of North Kohala, more than half of the participants were between 30 and 50 years of age (Fig 1). To date, slightly less than half of the eligible persons have participated in the NHHR project screening examination. These participants are somewhat older than the eligible population identified; consequently, the crude prevalence rates reported below must be interpreted with caution, since they may in part reflect the underlying age bias.

Based on the first 101 persons examined, the observed age-specific prevalence rates of diabetes mellitus among Hawaiian participants is 19.6%. The criteria used to establish NIDDM in participants were: History of NIDDM with current use of medication or a fasting plasma glucose value greater than 140 mg/dl or a 2 hour plasma glucose value greater than or equal to 200 mg/dl by 75 gm OGTT.[20] Interestingly, among those individuals found to have NIDDM, 45% were unaware of their condition before their participation in the NHHR health screening project. Approximately 14% of the participants were found to have impaired glucose tolerance (IGT) which was ascertained by a fasting plasma glucose level less than 140 mg/dl and a 2 hour glucose value between 140 to 200 mg/dl. Individuals with IGT are considered to be at increased risk for NIDDM and heart disease.[21] Overall, the prevalence of glucose intolerance (NIDDM and IGT) in NHHR project participants is 33% (Fig 2). The association of obesity with NIDDM has been well documented. A similar association is observed for the 101 NHHR participants. The median BMI for all study participants was 30 kg/m^2 and 76% had a BMI $\geq$ 27.5 kg/m^2. Furthermore, central body fat distribution was also observed in high proportion of NHHR participants. Almost half of all individuals (44%) had central adiposity as determined by WHRs (greater than 0.8 for women, 0.9 for men). Analysis of the detailed questionnaire of dietary intake is not available for this preliminary report.

Hypercholesterolemia is a major risk factor for CVD and this risk was examined in NHHR participants by analysis of fasting plasma cholesterol concentrations. Total cholesterol levels in excess of 200 mg/dl were observed in 79 of 166 participants. These findings are similar to that reported in the Molokai Heart Study. Analysis of plasma triglyceride, HDL-cholesterol, and LDL-cholesterol levels are not available for this report.

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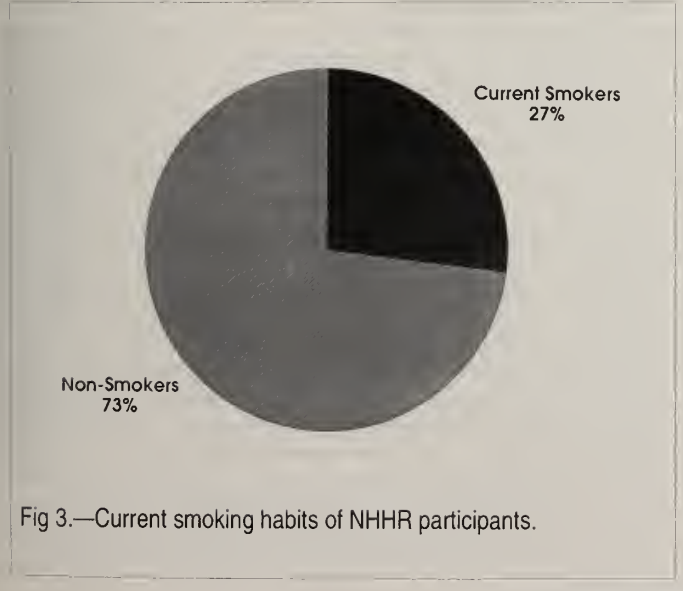


Fig 3.—Current smoking habits of NHHR participants.

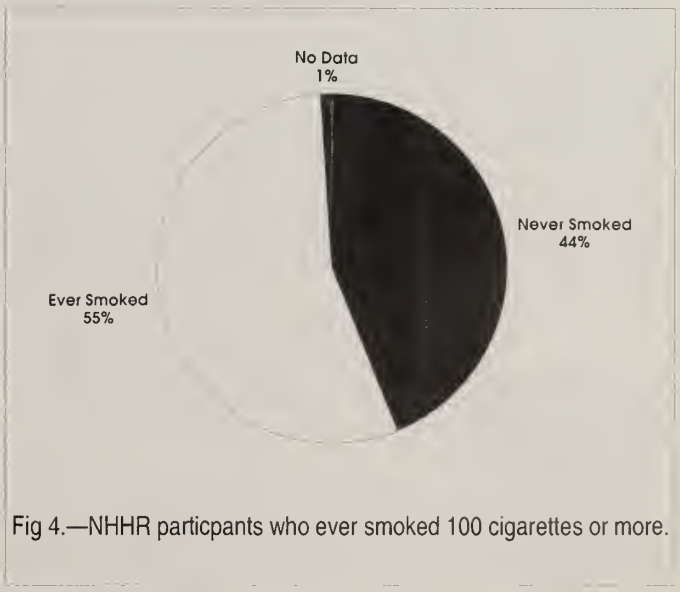


Fig 4.—NHHR particpants who ever smoked 100 cigarettes or more.

Non-Traditional and Traditional Treatment of Hawaiian and Non-Hawaiian Adolescents

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More than 4,000 adolescents of Hawaiian and non-Hawaiian ancestry responded to a survey that provided information concerning the frequency with which they had been treated by nurses/doctors and by Native Hawaiian healers, their treatment preferences, self-assessments of health concerns, and self-reports of health indices. Measures of identification with traditional Hawaiian culture, and 4 measures (depression, anxiety, conduct disorder, and substance abuse) of psychopathology were also obtained. Many Hawaiians sought treatment from Western practitioners (eg, medical doctors and nurses) and a few by Native healers. Differences in treatment-seeking behaviors were in the same direction for non-Hawaiians, but frequency of seeking treatment was fewer for both sources of health practitioners. Few Hawaiian and non-Hawaiian respondents preferred nurses as their first choice for help in overcoming mental problems, comparatively more preferred healers (more often by Hawaiians than non-Hawaiians), still more preferred medical doctors or ministers/priests, and most often preferred teachers or counselors. There was a slight positive correlation between being treated by nurses/doctors and by Native healers. Claims that acceptance of the Western and traditional Hawaiian treatment systems are antithetical to one another are not supported. While only a minority of Hawaiian adolescents prefer treatment by healers, the efficacy of indigenous diagnostic and treatment procedures need study, and if efficacious in maintaining mental health access to healers should be made more easily available for those preferring such treatment.

Sue and Morishima,[1] Lin, Inui, Kleinman, and Womack,[2] Higginbotham,[3-4] and Anderson[5] are among those claiming that there are substantial differences between racial/ethnic groups (even residing in the same nation) in judgments of the severity of psychiatric symptoms. Sue et al[6] and Narikiyo and Kameoka[7] have stated that Caucasians and non-Caucasians differ in beliefs concerning the causes of mental problems. Most of the research cited above has reported non-Caucasians to be underrepresented among persons using mental health services. It is assumed that problem frequency is equal across groups, and that an ethnic match between client and therapist[8] and/or the use of indigenous culture-specific treatment procedures[4] would increase the use of treatment facilities by non-Caucasians.

It is this last topic—the claim that non-Caucasians are rejecting conventional treatment and desire non-Western treatment—that is the concern of the present report. Two themes are present in papers cited above: First that non-Caucasians reject conventional Western treatment procedures and second, that they greatly prefer indigenous treatment modalities. These claims are made strongly with regard to Native Hawaiians by Higginbotham[4] and are reflected in a number of other papers in the edited book by Robillard and Marsella[9] in which Higginbotham's work appears. Snyder[10] reported that among people treated by Native Hawaiian healers, the vast majority preferred such treatment. There is evidence that there is a desire on the part of some individuals for such treatment, but there is little data with regard to the proportions of Hawaiians in general who prefer such treatment. The present report will examine data obtained from a large sample of Hawaiian and non-Hawaiian adolescents who, while perhaps not fully representative, are far more representative and can yield some information on the existing prevalence of preferred treatment sources.

Before describing the present report, two definitions must be made: 1) Who is Hawaiian? and 2) Who is a Native Hawaiian healer? The term "Hawaiian" refers to a person whose ancestry includes that of the aboriginal inhabitants of the Hawaiian Islands. The term Native Hawaiian healer refers to an individual who has undergone an apprenticeship in the Native Hawaiian healing traditions and practices. Native Hawaiian healers are formally known by the title of *kahuna* (the term to describe a teacher, scholar or expert, ie, the Western equivalent of an MD, PhD, or master artist/craftsman), followed by the specific area of medical or mental health expertise they possess. For example, the *kahuna laau lapaau* (a practitioner who is skilled in healing from the use of extracts, potions, and poultices made from parts of plants, as well as ocean seaweeds, algaes, corals, and fishes) is the most common kind of healer and is the Hawaiian equivalent of a medical general practitioner who treated the common ills of families. In traditional Hawaiian healing, the medicines used in healing rituals are comprised of plant and animal counterparts from the land and sea. For example, different phases of a treatment might involve using the *kala* (the name of a certain plant, seaweed, and fish) of the land (the *akala* raspberry), the *kala* of the sea (*limu kala* or *seaweed kala*), and the fish named *kala.*[11] Other *kahuna* specialize in specific areas such as the manipulation of muscles and joints to relieve joint inflammation, muscle strain or sprains (*kahuna lomi lomi*); diagnosing tumors, abscesses or other inflammations or infections of the pulmonary, cardiac or intestinal systems by body examination and palpation (*kahuna haha*); the setting of fractured bones and calling on spiritual forces for healing (*kahuna laau kahea*); and the assessment and mending of relationships

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which caused emotional discord within an individual, ie, the Hawaiian equivalent of a psychiatrist (*kahuna kuehu*).

Kahuna were licensed to practice medicine in Hawaii until 1965, at which time the Hawaii legislature discontinued licensing because of a lack of strong advocates for formally organizing the body of knowledge and practices of healers that largely worked within communities suspicious of Western ways and closed to the non-Hawaiian medical world.[12-13] Hence, use of traditional healers were largely within the Native Hawaiian community "word-of-mouth" networks until the 1980s when a federal focus on Native Hawaiian health resulted in the Native Hawaiian Health Care Act[14] and included Native healers as an integral part of a Native Hawaiian health care system. Today in Hawaii, Native healers from all islands in Hawaii have "gone public," have organized, and are now beginning to set standards of practice and training.

This paper has to do with the help-seeking behaviors for problems—either physical or emotional—and preferences for help with emotional problems. We obtained data regarding help-seeking behavior within the Western health delivery system and outside it, eg, seeking care from Native healers. The data are presented below.

Method

Sample.—The subjects were in grades 9 to 12 in five high schools. These students are participants in a longitudinal study that began with testing in 1992. The 1992 sample was obtained from 3 high schools, 2 on the island of Oahu and 1 from a Neighbor Island. The 1992 sample had such a high proportion (88.5%) of subjects of Hawaiian ancestry that there was a need for a more significant non-Hawaiian comparison group. From 1993, students from 5 schools were assessed from the original 3 schools plus 2 more schools from the Neighbor Islands. Participation occurred only with parental consent and the consent of the student. The 1993 sample consisted of 2,632 subjects of Hawaiian or part-Hawaiian ancestry and 1,532 subjects not of Hawaiian ancestry. Because the major purpose of the present study is to assess treatments for problems, treatment preferences, and personal correlates of differences in perceived and preferred types of treatment between Hawaiians and others, the non-Hawaiian group was not further subdivided by ethnicity.

Measures.—Ancestry was assessed by asking respondents whether or not they were of Native Hawaiian ancestry and, if so, their blood quantum of Hawaiian ancestry (100%, 50% or more, less than 50%). Since a person's Hawaiian blood quantum has important economic consequences, such as whether or not he or she is eligible for being allotted a Hawaiian homestead, it is probable that respondents were aware of their degree of Native Hawaiian ancestry. These responses were checked against responses to another question in which respondents listed their mother's and father's ancestral groups.

The frequency of treatment in the past 6 months by a nurse or a physician and by a Native Hawaiian healer were assessed in separate questions with alternative responses of never, once, twice, 3 to 4 times, and 5 or more times. Subjects were asked, "When you have mental and emotional problems, who would you prefer to see for help?" (Check only one.) Alternatives were 1) doctor, 2) nurse, 3) Native Hawaiian healer (*kahuna lapaau*), 4) teacher or school counselor, and 5) church minister or priest. They were asked how much their physical health had worried or concerned them in the past month (1 to 5 scale from "not at all concerned" to "very much concerned") and asked the same question concerning their mental (emotional) health. They were asked to rate their own health as compared with others of their same age in a 5-point scale ordered from "not as healthy" to "healthier than others." They were asked, "When did you last have counseling (dormitory counselor, school counselor, testing for personal problems) or any other mental health services?" Alternatives were: Never, over 2 years ago, 1 to 2 years ago, 6 months ago, 1 year ago, and within the past 6 months. They were asked, "During the past month of school, how many days were you absent because you were sick?" Alternatives were: None, 1 to 2 days, 3 to 4 days, 5 to 7 days, and 8 days or more.

The measure of Hawaiian cultural orientation consisted of 45 items responded to on a 3-point scale: 1) Unfamiliar/doesn't know, 2) You understand or believe in, you know about, you know how to (depending on the kind of item), and 3) You practice, believe in/support, you do (depending on the kind of item). The items were factor analyzed and fell into five factors (identical for Hawaiians and non-Hawaiians). These factors along with the 2 items loading on each factor are: 1) Traditional lifestyle (net fishing, taro farming), 2) Mythology/folklore (night marchers, *menehune*), 3) Spiritual/religious (*aumakua*, offerings at *heiau*), 4) Social activities (hula, chant/play music), and 5) Political causes (Hawaiian homesteads, Kahoolawe). (The factors listed as factors 3 and 4 were in reverse order for the non-Hawaiians). The Hawaiian cultural identification scale is described fully in Andrade, et al.[15]

The measures of adjustment that formed part of the questionnaire were the Center for Epidemiologic Study Depression Scale (CES-D)[16]; Spielberger State-Trait Anxiety Inventory[17]; The Braver Aggression Dimension Scale (BADS)[18]; and an abbreviated form of the Subtle Substance Abuse Screening Inventory (SASSI-A).[19] The abbreviated form of the SASSI consisted of 7 items from the original SASSI that had a high degree of face validity.

Procedure.—The self-report questionnaire was administered to all students at the same time during the spring semester in the morning (start time at 3 schools was 8:30 am and 10:30 am at 2 schools) on either Tuesday or Wednesday. Two weeks prior to the survey, parents were sent a packet containing on introductory letter with informed consent documents and a stamped, addressed postcard. Parents were instructed to mail the postcard to indicate their refusal for their child's participation. Failure to send the postcard indicated permission and consent (implied consent). On the morning of the survey, teachers (who received training 5 weeks prior) followed a written set of instructions explaining the purpose and nature of the questionnaire and active informed consent was received from students whose parents had given implied consent. Then all consent forms, which were match coded to the questionnaire booklets, were immediately collected and placed in sealed envelopes. Teachers then instructed students to complete the questionnaire. Members of the research team were available to answer questions. Most students completed the survey within 45 minutes.

Results

The first question to be addressed was that of ascertaining the number of Hawaiian and non-Hawaiian respondents who, within the 6 months prior to assessment, had been treated by a nurse or doctor or by a Native Hawaiian healer and, if treated, the number of separate treatments. (Table 1)

Counting 3 to 4 visits as 3.5 and 5 or more visits as 5.5, Hawaiian respondents made an average of 1.79 visits to a nurse or doctor and 0.12 visits to a Native Hawaiian healer. Non-Hawaiians saw a nurse or doctor an average of 1.24 times and a Native Hawaiian healer 0.05 times. Hawaiians visited nurses/doctors and also Native Hawaiian healers significantly more often than did non-Hawaiians (t values of 5.53, $p<.001$, and 6.68, $p<.001$ respectively).

Next, respondents' preferences for sources of help was assessed. Each respondent was asked to choose the preferred source of help from among the 5 alternatives listed in the table. In all, 729 respondents did not answer this question. The numbers and the percents of Hawaiian and of non-Hawaiian subjects choosing each of these alternatives is shown in Table 2.

The correlations between the different self-report indices of problems and with frequencies of having been treated by nurses/doctors and by Native Hawaiian healers are shown in Table 3 for Hawaiian and non-Hawaiian subjects.

The means of the 5 factor scores of the Hawaiian identification scale and the 4 measures of adjustment are shown in Table 4 for Hawaiian and non-Hawaiian respondents who 1) saw neither a nurse or doctor nor a healer, 2) saw a nurse/doctor but not a healer, 3) saw a healer but not a nurse/doctor, and 4) saw both a nurse/doctor and a healer.

Discussion

Being treated by a Native Hawaiian healer might involve being treated for physical illnesses by herbal medicine, massage, and having broken bones set, as well as being treated for emotional problems. Grouping all of these modalities together, treatment by a Native Hawaiian healer is far less frequent than treatment by a doctor or nurse. Two hundred twenty (8.20%) of the Native Hawaiian subjects saw a healer as compared with 2,040 (79.69%) who saw a doctor or nurse. Hawaiian subjects saw nurses/doctors significantly more often than did non-Hawaiians and also were treated more often by Native Hawaiian healers than were non-Hawaiians. These results conflict with claims that Hawaiians are rejecting of and unwilling to engage in Western treatment modalities, even though a portion of them are treated by Native Hawaiian healers as well.

Comparatively few Hawaiian subjects had been treated by healers in the past 6 months. As Table 2 indicates, a larger number of them (278) would prefer treatment by Native healers than those (220) who actually received such treatment. Even so, about twice as many Hawaiian subjects prefer being treated by a physician than by healers. Not surprising, the proportion of non-Hawaiian subjects preferring physicians to healers is even greater. Ministers/priests are viewed as being almost as important as physicians as sources of help in overcoming problems; this finding may reflect the availability of clergy through church activities. Seven hundred twenty-nine (21.3%) respondents did not answer the question on preference for sources of help perhaps indicating uncertainty or conflicting beliefs among these late adolescents.

Far more subjects prefer help from teachers or counselors than from any other source. This finding may be due to availability of teachers and counselors; however, given the negative view generally expressed toward schools by the media, this finding indicates that given a choice, students still prefer going to teachers and counselors when they need help. The findings on help preference suggest that prevention and intervention strategies might be most effective if access—and perhaps certain interventions currently relegated to mental health clinics—were facilitated and/or conducted by teachers and counselors.

The correlations between self-reported treatment by doctors/nurses and by healers are in the expected direction and although almost always significant, are small in magnitude. The correlations are comparable for the 2 groups of subjects. Two of them deserve mention. First (not surprisingly), there seems to be a general factor concerning worrying; people who worry about their physical health, worry about their emotional health as well. Second, and more important in terms of the aims of this paper, there is a small but significant positive correlation (as also can be seen in the frequency distribution of Table 1) between seeing a physician or nurse and being treated by a healer. Subjects who worried more sought help more frequently from both traditional and non-traditional sources.

Involvement with the Hawaiian culture was predictive of being treated by a Native healer for subjects of Hawaiian ancestry. (One of the questions having to do with Hawaiian customs had to do with knowledge of and belief in Native Hawaiian healing practices, essentially building in the association, but the items having to do with other dimensions of Hawaiian cultural identification did not have to do with healing.) While non-Hawaiian subjects as a group scored far lower in Hawaiianness than did the Hawaiians, involvement with Hawaiian culture was also predictive of being treated by a Native healer for non-Hawaiian subjects.

Persons who received no treatment generally were better adjusted than those receiving treatment by doctors/nurses, by healers, or by both. Persons treated both by doctors/nurses and healers generally had poorer adjustment as measured by responses to symptom scales, than were members of the other 3 groups. It is to be expected that persons with more problems would be more likely to seek help.

In general, those persons treated by a nurse/doctor or else by

Table 1.—Frequency of Treatment by Doctor/Nurse or by Native Healer.

Doctor/nurse	Native Healer Group	Never	Once	Twice	3-4	5+	Total
Never	H	457	15	6	3	9	490
	NH	360	0	6	1	0	362
Once	H	793	37	14	8	1	853
	NH	526	21	2	0	1	550
Twice	H	523	35	10	9	1	578
	NH	309	5	4	1	3	322
3-4	H	351	20	9	3	4	387
	NH	177	3	0	1	0	181
5+	H	186	23	4	1	6	220
	NH	70	1	0	0	2	73
Total	H	2310	130	43	24	21	2528*

H=Hawaiian; NH=Non-Hawaiian
*Ns slightly lower than the total N as a result of missing data.

Table 2.—Preference for Source of Help.

	Hawaiian	Non-Hawaiian	Total
Doctor	442 (20.12%)	347 (25.03%)	789 (22.57%)
Nurse	56 (2.55%)	49 (3.88%)	105 (3.21%)
Native Healer	278 (12.65%)	46 (3.72%)	324 (8.18%)
Teacher/Counselor	1104 (50.25%)	625 (50.48%)	1729 (50.36%)
Minister/Priest	307 (14.43%)	172 (13.89%)	479 (14.16%)

a healer, but not by both, were intermediate in symptom scores. The exception to this has to do with the depression scores, and to a lesser degree anxiety scores, of Hawaiians treated by a Native healer, which are the lowest of any group; however, the N is small, 26 of well over 2,000 Hawaiian adolescents. Notable Hawaiian Culture Scale findings among these 26 Hawaiians who exclusively sought Native healers for help are a) their cultural subscale scores were the highest of all subjects, indicating high involvement in Hawaiian culture, and b) their subscale score for "Mythology and Folklore" was the highest score among all Hawaiians. Items in the "Mythology and Folklore" subscale which include nightmarchers, *menehune*, *Pele*, *Maui* the demigod, the ti leaf as protection, rain blessing, and *Kahuna* attempt to measure cultural beliefs that are somewhat "magical" and explore the deepest belief level, the one that is most divergent with Western beliefs. These findings may suggest that depression (and anxiety), common transient symptoms in all adolescents, are best influenced by a psycho-cultural framework, not a biological one.

It has been claimed that Hawaiians are not accepting of the conventional Western health care delivery system and prefer culture-specific indigenous treatment. Neither of these claims is supported by the present data. Hawaiian adolescents report being treated by nurses or doctors more often than do non-Hawaiians. Comparatively few Hawaiian adolescents have been treated by Native healers and only about 1% have been treated by healers and not by nurses or doctors as well. The frequency of treatment of one versus the other source of help is positively correlated. Help seeking from 1 of the 2 sources is not negatively associated with help seeking from the other source. More Hawaiian adolescents prefer treatment by a Native healer than actually have received such treatment, but even so, only 12.65% prefer this source of help.

Results having to do with preferred helpers indicate a strong preference for teachers or counselors. Providing teachers and counselors with objective screening measures of adjustment and providing them with opportunities to enhance their treatment skills would appear to be an extremely cost-effective means of helping young people overcome their problems. Although more difficult to accomplish, ministers and priests might welcome information concerning treatment techniques and their effectiveness.

The findings of this study show that Hawaiian opposition to conventional medical practices and preference for indigenous treatment modalities have been exaggerated or may be a function of when studies were conducted: The 1979 work done by Synder versus our current work done 15 years later. The significant number of Hawaiian adolescents who do receive indigenous treatment indicate that an examination of Native healer's diagnostic systems and an understanding and evaluation of treatment procedures clearly would be of value, as would be further ethnobotanical study of Hawaiian herbal medicine. An integration of Western and indigenous healing practices should be a major goal for the medical and psychiatric practices in order to provide indigenous peoples with culturally syntonic health care.

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Table 3.—Correlations of Self-Reported Problems and Frequency of Treatment by Nurses/Doctors and Healers.

		Worry, mental health	Comparative health	Last counseling	Absences	Saw nurse/doctor	Saw healer
Worry, physical health	H	0.55	-0.26	0.13	0.19	0.18	0.07
	NH	0.50	-0.22	0.11	0.14	0.22	-0.01
Worry, mental health	H		-0.15	0.25	0.14	0.11	0.09
	NH		-0.15	0.21	0.10	0.15	0.06
Comparative health	H			-0.03	-0.18	-0.05	0.01
	NH			-0.07	-0.14	-0.10	0.01
Last Counseling	H				0.07	0.15	0.04
	NH				0.08	0.15	0.08
Absences	H					0.25	0.13
	NH					0.20	0.05
Saw nurse/doctor	H						0.08
	NH						0.06

H=Hawaiian (Ns range from 2287 to 2338). NH=Non-Hawaiian (Ns range from 1361 to 1386. Correlations of 0.05 and above are significant. ($p<0.05$)

Table 4.—Help seeking, Hawaiian-ness, and Symptom Scores

	Hawaiian				Non-Hawaiian			
	Neither/ Doctor nor Healer (449)	Nurse/ Doctor, no Healer (1689)	Healer, no Nurse/ Doctor (26)	Both Nurse/ Doctor, Healer (174)	Neither/ Doctor nor Healer (336)	Nurse/ Doctor, no Healer (1022)	Healer, no Nurse/ Doctor (1)	Both Nurse/ Doctor, Healer (28)
Hawaiian-ness								
Customs	58.73	61.62	74.23	69 20	47.90	48.93	63.33	54.88
Causes	65.73	68.51	77.88	73.92	49.15	50.15	45.83	53.57
Folklore	72.97	74.90	88.46	80.90	60.25	62.11	79.17	66.05
Life Style	65.20	66.04	81.79	77.89	53.25	52.93	43.33	67.38
Activities	67.39	70.77	81.94	77.71	51.11	52.92	58.33	58.53
Symptoms								
Depression	15.37	16.09	12.69	18.28	13.89	15.23	20.00	20.29
Anxiety	18.89	19.85	17.00	21.45	17.96	19 20	19.00	23.18
Aggression	6.11	5.90	6.31	7.29	4.71	5.30	5.00	7.61
Substance Abuse	1.06	0.91	0.96	1.57	0.65	0.81	0.00	1.54

Native Hawaiian Traditional Healing

Nanette L.K. Judd RN, MPH

"A person's life is very important. *Laau lapaau* [herbal medicine] is serious business," said Papa Henry Auwae, one of Hawaii's few remaining master traditional healers. He has spent the past 70 years treating people from as far away as Switzerland, Italy, and Canada with herbal and spiritual medicine. Papa Auwae spearheads a statewide organization of Native Hawaiian traditional healers committed to preserving the art of *laau lapaau* in its purest form. This organization, known as *Kupuna Laau Lapaau*, was established in 1991 with the assistance of *E Ola Mau*, a not-for-profit Native Hawaiian organization comprised of both Western health care professionals and Native Hawaiian traditional healers. The mission of *E Ola Mau* is to ensure that Native Hawaiians achieve *lokahi* (healthful harmony of self with others and all of nature) and function effectively as citizens and leaders in their homeland. *E Ola Mau*'s role has been to improve the health of Native Hawaiians by bridging the gap between Western and traditional healing.

Papa Auwae is at the forefront of renewed interest in Hawaiian traditional healing arts. Until a 1988 meeting in Kona sponsored by the Office of Hawaiian Affairs, Papa Auwae practiced the art of healing within the circle of his family and friends. At the Kona meeting, Papa Auwae made a decision to share his knowledge and to work with the *kupuna* (elders) healers. He decided to share secrets that he had learned from his great-great-grandmother at the age of 7. At the heart of Native Hawaiian traditional healing is the love of God, the source of all healing. Therefore, healing sessions begin with prayer and counseling before *laau* or herbs are given. Treatment of patients, according to Papa Auwae, is individualized and medicines are prepared for a particular patient. He was instructed never to take money for his services. Papa believes that the medicines are put on earth by God, not humankind, and therefore, is to be shared with all ethnic groups.

Native Hawaiian traditional healing is rooted in nature and history. For Hawaiians of the past, religion and healing were two sides of the same coin. Hawaiians held a holistic view of the universe that shaped their concepts of wellness and illness, and life and death. Hawaiians believed, as did other Polynesians, that humans and nature were interconnected. Each plant, animal, and object of the earth, sea, and sky have a spiritual content. Therefore, a river was not a river—it was the home of a divine spirit. Based on this philosophy, everything had a soul, a name, personality, power, and feelings. Hawaiians personified forces of nature into various gods which had dual functions.[1-3] *Ku*, for example, was the masculine god and *Hina*, the feminine. Both individuals were parts of the "*Ku*- and-*Hina* godhead." Where *Ku* was found, *Hina* was also present.[2-3]

No supreme god existed in ancient Hawaii, and generally the nature of the gods was neither all good nor all bad. The gods contained *mana* (spiritual powers) and were found in different *kinolau* (body forms). The *aumakua* or ancestor gods formed the closest relationship to humans. These gods, which had once been living souls who had departed from earth, had the dual nature of protecting as well as punishing their descendants. Families prayed to their *aumakua* in time of sickness or family problems. Formal prayers were composed and repeated perfectly as chants to the gods. Before the chant was recited publicly, each work was examined for any harmful inner meaning. It was believed that the spoken word could bestow blessings or perhaps a curse. There was power or a force found in the words themselves.[2,4]

In ancient Hawaii, ethnomedicine consisted of a wide spectrum of practices, ranging from herbal medicine to sorcery, with many levels of classes between. Orders of priests called *kahuna* (keeper of the secrets) were trained to apply their religious knowledge and practical skills to adjust the "equilibrium of relationships in the cosmos" to achieve the results desired.[5] Their responsibility was to advance knowledge and confront new situations dealing with the unknown. The highest orders of priests served the paramount chiefs and were described as knowing all the specialties. The lower orders included the *kahuna lapaau* or medical doctors.[5]

Training of the *kahuna* consisted of selection at an early age which was based on intelligence, interest, and eagerness to learn. Instruction would begin at dawn and continue until sunset, at which time students were taught to observe, to listen, and to learn by experimenting. According to Hawaiian historian Samuel Kamakau, if young boys were dedicated to the *kahuna* class, the boy's body was kept pure. His hair could not be cut; his clothing, his sleeping mats, his house, and his food and drink were considered *kapu* or sacred.[4]

Hawaiians did not make a distinction between disease, healing, and religion. The interaction of psyche and body was viewed in a spiritual context, and healing embraced the total being—body, mind, and spirit. Hawaiians believed, and in the

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believing certain plants were afforded psychological healing potentials, regardless of whether or not they contained therapeutic value. The medical *kahuna* practiced what Westerners refer to as "empirical medicine." Healers observed what worked and what did not work.[2] The *kahuna* code of ethics was to do only what one had been trained to do. Therefore, referring a patient to another *kahuna* was common practice.[2]

For a number of years, the government of Hawaii tried to regulate and license the *kahuna*. Part of the pressure stemmed from Western disapproval of Hawaiian medicine. Another factor was a general move to license all healing practitioners, including Western and Chinese. In 1886, the act to establish a Hawaiian Board of Health was passed which specified that a three-person board would examine Hawaiian practitioners in terms of moral character and maintenance of treatment records. In 1959 when the Territory of Hawaii became a state, laws pertaining to the traditional healer were abolished.

Today, renewed interest in Native Hawaiian traditional medicine has the blessings of the federal and state governments which are seeking to improve the dismal state of Native Hawaiian health. In October 1988, U.S. Congress passed Public Law 100-579, the Native Hawaiian Health Care Act (NHHCA). The NHHCA provides for the establishment of up to 9 Native Hawaiian Health Care Systems throughout the state and fosters healing options that are culturally appropriate. The law encourages the services of traditional Hawaiian healers as providers of care. A traditional healer is defined as an individual of Hawaiian ancestry whose knowledge, skill, and experience are based on demonstrated learning of Hawaiian healing practices acquired by direct association with Hawaiian *kupuna* (elders) and oral traditions.

Papa Auwae works closely with members of *Kupuna Laau Lapaau,* as some prefer to be called, using the respectful term for elder. The average age is 70. There is a recognition by the *kupuna* that because of their age, it is important to preserve and perpetuate herbal healing practices. According to Kukana Isaacs, coordinator of the organization, fewer than 20 have "come out" to share their knowledge with everyone. These *kupuna* are committed to creating a registry of healers, to setting standards of practice, and to training *kakoo* (assistants) and *haumana* (students). Most important, they are committed to learning from Papa Auwae and from one another. Papa Auwae is recognized as the *kupuna* with the most years of training. These healers have made a decision to come together to form a common body of knowledge so that little is lost. Papa Auwae stresses the need for standards because he believes there are quacks or charlatans who call themselves traditional healers. As head of the *kupuna* organization, Papa feels that they are not ready to be licensed or certified at this time.

Papa Auwae uses thousands of plants and spiritual strength to alleviate mental and physical health problems. Some Western physicians have become interested in Hawaiian healing and are beginning to accept some of the Native Hawaiian healing principles. The effect the mind has on the immune system is being studied in the discipline of psychoneuroimmunology.

Papa Auwae and *Kupuna Laau Lapaau* continue their firm commitment to preserve the art of *laau lapaau* for all people. Currently, more than half of the world's population relies on traditional practitioners for health care services. Internationally, the World Health Organization promotes the study of indigenous medicine and investigative studies of efficacy, and the incorporation of traditional medicine into health care services. In Hawaii, Papa Henry Auwae says he will teach anyone with the heart to learn as long as he or she doesn't use it for profit. With the assistance of *E Ola Mau,* the traditional healers conduct workshops in communities throughout the state. *E Ola Mau* has been entrusted with a directory of traditional healers and looks forward to the time when this registry can be shared with all health care providers for the benefit of all people of Hawaii. For more information, contact *E Ola Mau* at (808) 586-4800.

Note: To respect the wishes of the kupuna *in the statewide organization* Kupuna Laau Lapaau, *diacritical marks are not used in this article.*

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*Imi Hoola Program

Those Who Seek to Heal

Beginning in September 1995, the University of Hawaii John A. Burns School of Medicine plans to restructure its program for disadvantaged students. The new program is called *Imi Hoola* and is designed to enhance unsuccessful medical school applicants survive the rigors of medical school by providing a structured academic program, academic counseling, tutoring, and psychosocial support. Each school year, 10 post-baccalaureate students who have applied, but were not accepted into medical school, or who made a late decision to enter a health profession school, will be selected to participate in an intensive 13-month post-baccalaureate program.

The mission of the John A. Burns School of Medicine is to train students to a high level of competence as primary care physicians, with the goal of improving health care in Hawaii and the broader Pacific. The school aims to make medical careers possible for members of underrepresented Pacific Island groups whose educational goals have been hindered by a disadvantaged background. The goal of *Imi Hoola* is to increase the number of Pacific Islanders in medicine. The program is designed primarily for, but not limited to, persons of Hawaiian, Filipino, Samoan, Chamorro, and Micronesian ancestry.

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Mamane: Scientific Therapy for Asthma?*

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Mortality from asthma in Hawaii continues to increase and chronic problems of medication compliance, side effects, and cost persist. The advisability of adding alternative (traditional) medication for its anti-inflammatory and anti-allergic function was examined. One of the herbs for asthma in the Hawaiian narrative tradition is mamane, or in scientific terminology, Sophora chrysophylla. The scientific literature on S. chrysophylla and of the closely related species Sophora flavescens ait were reviewed in this context and the findings support further investigation.

Introduction

Mortality from asthma has increased in Hawaii since the 1980s and still shows no consistent decline.[1] Furthermore, compliance with therapy, drug side effects, and costs continue to be chronic problems. To determine the potential contribution of alternate medicine to their resolution, a historical review of written and traditional narrated Hawaiian materia medica for asthma was conducted and 58 herbs were selected as being potentially useful therapeutically.[2] Among these was *mamane* or *Sophora chrysophylla*.

We selected *S. chrysophylla* for a scientific literature review of its role in asthma. In addition to its local use, the genus *Sophora* has been a source of alternative medication for centuries for people from India to America.[3] The structurally similar *Sophora flavescens ait* (*SFA*) has extensive scientific literature.

Methods

The scientific literature was searched under the headings of *mamane* and of *S. chrysophylla*. Subsequently, the search centered on the scientific bibliography of the closely related species, *Sophora flavescens ait*.

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Results

Botany

Leguminosae or the pea family is the third-largest family of flowering plants, consisting of some 600 genera and 17,000 species.[4] It has 3 subfamilies, one of which is *Papilionatae*, and it contains the genus *Sophora*. Among the 50 or so species of *Sophora* are *S. chrysophylla* and the closely related *SFA*. The former is endemic to Hawaii,[5] and the latter is found in China.[6a]

The growth of *mamane* varies from a shrub at low altitudes to a tree 2 feet in diameter and 40 feet tall at high altitudes.[7] It is widespread except on the island of Molokai. Optimal growing conditions include sunny slopes, heavy rainfall, and strong winds.

Although flowers, leaves, seeds and bark have medicinal properties, the root is the portion used most frequently; it is believed to be best harvested with appropriate religious ceremonies.

Chemistry

A century ago, chemists investigated the subfamily *Papilionatae* because of its poisonous side effects when used as cattle fodder, as applications in veterinary medicine, and as insecticides.[8] The major components are alkaloids with some flavonoids, glycoproteins, and chromones.[6a,9]

Alkaloids are nitrogen-containing compounds widely used medicinally. The alkaloidal content and structure of *S. chrysophylla* have been investigated.[8,10-13] Among these were anagyrine, cytisine, mamanine, matrine, pohakuline, sophochrysine, and sophoramine. Major alkaloids of the closely related species, *SFA*, are anagyrine, baptifoline, cytisine, matrine, N-methylcytisine, oxymatrine, sophocarpine, sophoramine, and sophoranol.[14] Their biogenesis has been extensively studied with isotope tracers.

Quantitatively and qualitatively matrine, or $C_{15}H_{24}N_2O$, is the major alkaloid of these 2 species. Attention also is drawn to oxymatrine, $C_{15}H_{24}N_2O_2$, which is structurally almost identical and has the same solubility profile.[6a] Matrine is easily oxidized by H_2O_2 to oxymatrine which, in turn, is reduced to matrine by hydrogen. The extensive international research literature on oxymatrine may be applicable to matrine.

Absorption, fate, and excretion

S. chrysophylla is traditionally administered either as a tea or topically[15] and other *Sophoras* are available in the form of tablets, aerosols, and intramuscular and intravenous preparations.[3] No data is available on the metabolism of *S. chrysophylla*, but research has been published on those components it shares

with the closely related *Sophora* species.

Oral matrine was absorbed in rats and mice and was widely distributed in tissues with selective concentration in the lungs; for this reason, matrine may be more suitable than other alkaloids of *Sophora* in the therapy of asthma.[16] In rats, 80.1% of ingested matrine was excreted in the urine in less than 24 hours, and in humans, 60%.

Oxymatrine was metabolized somewhat differently than matrine, depending on the route of administration. Oral oxymatrine was transformed to matrine in the gastrointestinal tract of rats and mice, which explains why the concentration of matrine was higher than oxymatrine in the tissues. By 24 hours, 80% of the oxymatrine ingested was excreted, more as matrine than oxymatrine.[16] In 3 humans who took 380 μM of oxymatrine orally at night, the total combined matrine and oxymatrine found in the urine in 24 hours was 41.1%, 43.2%, and 70.1%, respectively, and of these 67.1%, 61.1%, and 53.1% was matrine.[16] When given intramuscularly, oxymatrine concentration was high in tissue, bile, and urine with 85.3% of the total dose being excreted unchanged in the urine in 24 hours.[16] Intravenous oxymatrine in rats disappeared rapidly from the plasma with the plasma concentration versus time following a 2-compartment model: T 1/2 (a) = 5.8 min and T 1/2 (ß) = 27.0 min.[16] There was no prolongation of the half-life or elimination by increasing the dose by 25, 50, or 100 mg/kg intravenously. In a similar study in rabbits, oxymatrine was given intravenously as 25, 50, or 100 mg/kg.[17] The plasma concentration-time curves again fitted the 2-compartment model of 5.8 and 29.6 min respectively and pharmacokinetic parameters a and b were not changed with variable drug doses. Excretion was renal with little or none in the feces or bile.

Pharmacology

Bronchodilator.—*Sophora* alkaloids have an antiasthmatic effect.[3] As with theophylline, *Sophora* has influenced the activity of adenylate cyclase or phosphodiesterase,[18] but findings by Y.K. Chien in 1992 noted that the cAMP level remained stable with oxymatrine therapy and did not confirm in vitro a phosphodiesterase effect, at least with this alkaloid.

S. japonica agglutinin labeled the small mast cells but not the large[19] perhaps indicating a selective action of *Sophoras* on bronchodilation.

Anti-inflammatory.—The importance of inflammation in asthma has been stressed recently. Management of this chronic inflammation is difficult even with anti-inflammatory drugs such as steroids, methotrexate, and gold salts because of toxicity. The benign anti-inflammatory action of *Sophoras* could be utilized. There is extensive evidence of this function.[20-21] An effect of *SFA* was modification of interleukin-1 and interleukin-6 of inflammatory asthma.

Anti-allergy.—Matrine and oxymatrine have major anti-allergic actions. Using a model of immediate hypersensitivity in the guinea pig, oxymatrine decreased mortality to 61% and suppressed the IgE response ($p<0.01$) after a week of treatment.[22-23]

Histamine release from mouse peritoneal mast cells was suppressed by oxymatrine when it was induced by allergic stimulants anti-DNP IgE, and TNP-KLH, but not by non-allergic stimulants such as PMA, A23187, or ATP.[24] Oxymatrine might interfere with histamine release by stabilizing the mast cell membrane and decreasing its fluidity in a dose-dependent manner.

Immune response.—In 15 patients with severe asthma, 50% purified *SFA* administered over 2 months lowered IgE, but not IgA or IgG, and increased interleukin-1 and -4.

According to the Y.K. Chien, et al. studies, the concentration of Sophoras is a major determinate of their action on the immune system. Using lymphocyte numbers and interleukin levels as markers in mice, oxymatrine stimulated the immune system at low concentrations (10^{-5} to 10^{-2}) and suppressed it at higher concentrations (>1.0 mg/ml).

Among actions gleaned from the literature, *SFA* alkaloids inhibited antibody production in sensitized animals and depressed their skin reaction. Matrine inhibited the phagocytic function of mouse peritoneal macrophages in vitro.[19] Also, oxymatrine inhibits B but not T lymphocytes.[19,24]

Antibiotic.—Infection is a frequent trigger of asthma, and antibiotics are important for prophylaxis and for treating episodes. A 1% solution of matrine inhibited in vitro growth of such organisms as *Bacillus dysenteriae*, *Escherichia coli*, *Bacillus proteus*, *ß- streptococcus*, and *Staphlococcus aureus*. *SFA* solution inhibited violet mycelial fungus, several skin fungi, trichomonas, and influenced flagellae.[25]

Toxicity and Precautions.—After centuries of use, very little toxicity has been linked to *S. chrysophylla* or to *SFA*.[6b] Unlike allopathic medicine where the purity of a drug is paramount, alternative medication consists of a number of components that display a balance between active constituents and those that buffer the side effects. Thus, a desiccated root has few side effects, extracts have more, and purified products can rarely be seriously toxic.[3]

Of importance in asthma are the rare reports of presumed respiratory dysfunction. Matrine has been associated with respiratory center depression in animals, but the results are variable.[6b] When administered into rabbit ears intravenously, matrine up to 0.036 mg/kg was safe, 0.045 to 0.10 mg/kg led to weakness, 0.10 to 0.11 mg/kg could lead to failure with a partial recovery, but 0.133 mg/kg led to signs of fear, limb weakness and spasm, and a respiratory death. In another study, the LD_{50} of intravenous matrine in rabbits was 125 mg/kg.[6b] In mice, it was 150 mg/kg.[6b]

Oxymatrine showed an LD_{50} with 150 mg/kg intravenously given to mice and 750 mg/kg intra-peritoneally.[6b] Another study found values of 952.6 ± 11.6 mg/kg and 519 ± 15.18 mg/kg intraperitoneally, respectively.[6b] The LD_{50} for acute toxicity in mice was 256.74 ± 57.36 mg/kg and intravenously was 144.2 ± 22.8/kg according to personal communication with Y.Y. Chen, Professor of Pharmacology at the Beijing Medical University in 1992.

Sophocarpine, another alkaloid, might slow respiration and decrease blood pressure when injected intra-peritoneally in rabbits in large doses, ie, up to 150 mg/kg or 78 ± 1.6 mg/kg.[6b]

In tests of mutagenicity, Yin found that *SFA* induced chromosomal aberration in *Salmonella typhimurium*[26] but this was not confirmed by Chen.

Clinical Applications

No controlled trials of *Sophora* in asthma or infective asthma have been published in Western medical literature. The Anti-asthma Drug Research Group, Department of Pharmacology at Guiyang Medical College reported that alkaloids of *SFA* used to treat 87 cases of chronic asthmatic bronchitis and 37 cases of bronchial asthma led to 90.3% success. Antitussive and expectorant actions were noted. A controlled, double-blind study was performed over 3 months in 15 severe asthmatics with 50% purified *SFA*. There was clinical improvement with increased tolerance to methacholine bronchial challenge, decreased use of

➤ *(Continued on Page 363)*

Health Care Aboard the *Hokulea*—Energy Requirement Study

Patrick K.H. Aiu MD

The Hokulea was designed and built as an archaeological experiment to test the theory of "intentional exploration and colonization of Polynesia as opposed to the theory of accidental settlement." It is a 60-foot replica of an early Polynesian voyaging canoe. First launched in the spring of 1975, the Hokulea has made multiple voyages between Hawaii and Tahiti navigated without the use of instruments of any kind. The Polynesian Voyaging Society is the no-for-profit corporation that built and operates the Hokulea and the Hawaii Loa, a larger double-hulled sailing vessel scheduled for its maiden voyage in 1995.

With the emphasis on authenticity in as many areas as possible, the April 1986 voyage of a traditional Polynesian canoe from the Marquesas to Hawaii was an interesting challenge.

In the area of nutrition, a multitude of factors had to be considered. While striving for traditional authenticity, we had to be alert to the food itself: Preparation, preservation, packaging, palatability, nutritional make-up and value, bulk and weight for storage, and its preparation on the voyage. Consideration of the amount of water needed for its preparation or reconstitution, as in the case of *paiai*, was important because of the limited supply of water carried aboard. Many of these were noted in the draft of the Request for Proposal for the Native Hawaiian Culture and Arts Program of the Bishop Museum.[1]

Consideration of nutrition also required looking at the recipient side of the equation. Only vague glimpses and theories were available to us of the physical stature and make-up of the initial and early Polynesian sailing crews. We like to fantasize them as robust, powerful people in the best of physique and health; in all probability they were much the same as today, albeit physically stronger, more fit, and inured to the sea because of the prevailing lifestyle. I believe, though, that they were physiologically similar to Hawaiians of today.

With this thought in mind, nutritional considerations should make use of some interesting findings gleaned from studies that I made on voyages in 1980 and 1985 to 1987.

During those years, I was the physician on board the majority of the sailing legs. I personally undertook a study to determine the caloric requirements and the calorie expenditure of the crew members. The study was divided into 1) duration of sail, 2) body type of member, 3) racial mix of member, 4) gender, 5) general health status, and 6) age.

The pre-sail weight was logged for each crew member along with his or her vital statistics and demographics. A medical history was obtained; however, no laboratory tests were done.

The total consumption of oral intake for each individual was logged diligently for each 24-hour period. A daily medical log was kept. It should be noted that in this study, seasickness was never a factor. On one 35-day voyage, we attempted to record the weights of all members twice a week. The participation was not 100% on this endeavor; some crew members lacked interest or refused to be weighed, saying it was a "pain in the ass."

Enough information, however, was obtained to make valid projections about weight changes related to time at sea. On completion of a voyage everyone was weighed within 2 hours of landfall and compliance at this stage was excellent, in all occasions nearing the 98th percentile. The same scale used at the onset was used for the closing weights, although at certain isolated areas a different scale had to be used, thereby introducing a factor for error.

The daily oral consumption charts were given to Kathleen Watanabe, then a registered dietitian at G.N. Wilcox Hospital on Kauai. She calculated the total caloric intake per day of each individual in the crew. With the data on weight change by the week and/or the total voyage, a tabulation was made for each individual for positive (weight gain), negative (weight loss) or neutral (no change or minimal change) weight change. Factored into this was the standard figures of caloric requirements for basal body functions and maintenance levels for individuals according to height and weight.

Some interesting findings were noted. The medial 24 hour caloric intake was 4700 calories, the high was 6420 Cal and the low 3680 Cal. The weight change showed a median weight loss of a 30-plus-day voyage as 16.3 lbs loss. The maximum weight loss was 37.5 lbs (MM–Hawaii to Papeete voyage). One individual (ST–Rangiroa to Hilo voyage) had a 4 lb weight gain! In all, 3 individuals gained weight on a 30-day voyage. Of the 3 individuals who gained weight, 2 were thin, well-muscled individuals with estimated body fat of less than 10%; one of the crew members was a woman; two did not have watch duties requiring the heavy work expenditure needed in steering or working the sails; one was a very light eater on board, as he was on land.

Of the people who lost weight, the general correlation could be made that the heavier initial weight and higher percentage of body fat made for greater weight loss. The average daily amount consumed by each individual remained fairly constant during the entire trip, ie, heavy eaters generally ate more, snacked more, and used more peanut butter and jelly on more crackers. But with fair consistency, these individuals had the greater weight loss.

On voyages lasting 12 to 21 days, everyone lost weight, again following the pattern as described above, with a maximum weight loss recorded as 45 lbs in 12 days (JK–Aotearoa to Tongatapu voyage).

Voyages of 7 to 12 days showed moderate weight losses with a maximum of 27 lbs. Even voyages of 3 to 7 days show losses up to 7 lbs but the pattern of +, -, and 0 weight change is erratic. There was no statistically discernible pattern on voyages of 24 hours or less.

In all voyages the daily caloric consumption showed the high levels as described.

From the data and graph, the following assumptions can be made:

- The individual case of MM on a 30-plus-day voyage in which his loss at 21 days was 42 lbs and at voyage end was 37.5 lbs was studied (Fig 1). This pattern was seen on other individuals who could be weighed before, during, and at the end of a voyage. From these figures, it can be assumed that a period of fairly rapid weight loss occurs despite a large caloric intake; a period of leveling off, and a period of gradual regaining of weight.
- During the course of a long voyage, body habitus changes, shoulders broaden, arms enlarge, waists slim down. The loss of body fat and the enlargement of muscle mass is easily seen. I surmise that large amounts of body fat are catabolized during the initial 3 weeks. Thereafter this source of energy is stabilized and as muscle mass increases, weight begins to rise again.
- If an individual required 1500 Cal/day for basal metabolism, the median person with a weight loss of approximately 21 lbs in 3 weeks loses 1 lb/day = 3000 Cal deficit/day. If that individual ate 4000 Cal that day and still lost a pound, he or she had a caloric deficit of 3000 Cal. The total caloric expenditure in energy would be in the range of 7000 Cal/day!

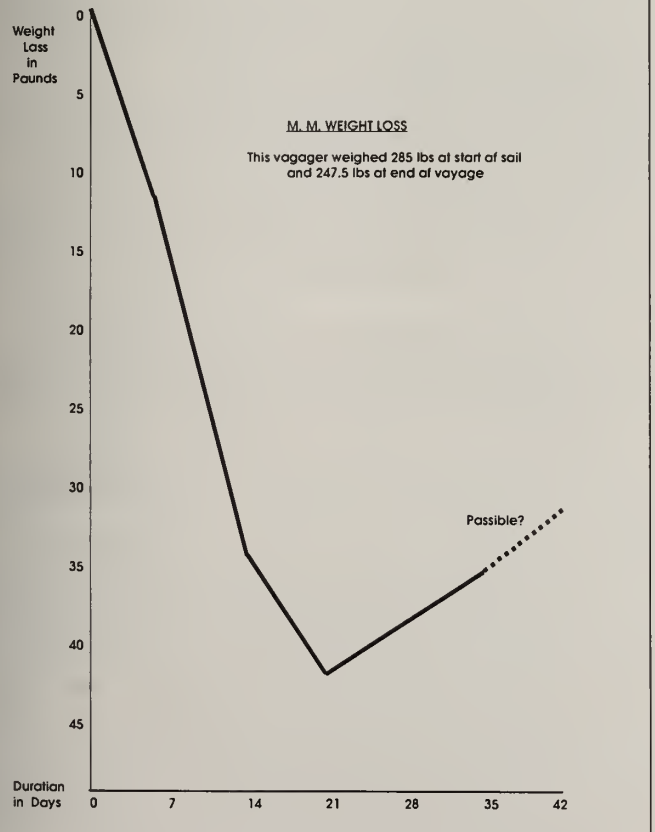


Fig 1.—Crew Member's Weight Loss on a 30-day Plus Voyage.

From these observations the following recommendations can be made:

- Diet should be high in complex carbohydrates (60% to 70%) to:
 - aid in catabolism of fat
 - help in feeling sated
 - protect from ketones and acidosis
- Protein needs can be met with 15% to 20% of diet.
- Fat is needed between 15% to 20% to provide caloric increases.
- Adequate water intake is essential to prevent ketonuria, lactic acidosis and stone formation, particularly in the initial 20 days.
- The most susceptible time for developing illnesses such as colds, flu, and stomach flu would be in the initial 14 to 21 days when rapid tissue breakdown occurs with the possibility of acidosis if water or carbohydrate intake is curtailed.
- The doctor on board should be aware of these parameters so preventive measures can be employed such as dipsticking urine for acidosis and looking for signs of dehydration.
- In reality, the doctor on board would not be able to control an outbreak of flu, cold or enteritis. My belief is preventive precautions to keep any disease process from occurring or spreading is imperative. The physician's recommendation on the adequacy and consumptability of food and water on board should be paramount. He or she should also have responsibility for preventive measures such as a) personal hygiene, b) dental hygiene (brushing, flossing, Stimudent™), c) hygiene of cooking galley and utensils, and most important d) adequate rest periods which would favor a 3 watch system working 4 hours on and 8 hours off.

References

1. Request for proposal; Bishop Museum Native Hawaiian Culture and Arts Program Exploration Program, funded by the National Park Service, Department of the Interior, Grant application September 1, 1994.

Patrick Aiu MD is a gynecologist at Wilcox Memorial Hospital on Kauai and a state surgeon with the Hawaii National Guard. Dr Aiu has been very active in the Polynesian Voyaging Society, serving on its Board of Directors. He also served on the Hokulea *as radio operator, crew member and ship's physician. The voyage he denotes here took place in April 1986, sailing from New Zealand to Tonga.—ED.*

The Hawaiian Diet at Maui Memorial Hospital

Steven M. Moser MD

Introduction

The incidence in Native Hawaiians of diabetes, renal failure, diabetes, hypertension, heart disease, obesity, cancer, and other degenerative diseases is one of the highest in the United States.[1-7] A large part of their illness arises from poor nutritional practices, with massively excessive consumption of calories, protein, fats, and salt.

Research in the mid-1980s performed by the Molokai Heart Study Group of Molokai[8] and by Dr Terry Shintani[9] of Waianae, Oahu, demonstrated conclusively that many of the physical and biochemical indicators of disease among Native Hawaiians could be markedly improved by placing them on a diet of traditional Hawaiian foods under a supervised program of organized, culturally appropriate eating and teaching. A recent article in the *Hawaii Medical Journal* reviewed the history and rationale of the Hawaiian (or Waianae) Diet.[10]

Three years ago, building on the success of the demonstration studies, the State of Hawaii established a Hawaiian Health Program which obtained state and federal grants to promote application of the findings among Native Hawaiians. Under these auspices, the *Hui No Ke Ola Pono* was founded and funded to promote health among the Hawaiian population of Maui County. The *Hui* has since organized several 3-week dietary programs for groups of about 20 persons, including the indispensable elements of serving traditional Hawaiian foods, dispensing culturally relevant dietary and sociological information, and utilizing a communal setting to enhance mutual support and follow-up.

This program met with unqualified success in several localities around Maui. Several physicians from Maui Memorial Hospital participated in these programs and were impressed with the results in patients who participated. In early 1993, the Nutrition Committee of Maui Memorial Hospital engaged *Hui No Ke Ola Pono* to help with the design and implementation of a hospital-based Native Hawaiian diet program for hospital employees.

The purpose of having the program at the hospital was two-fold: 1) to offer a positive program for health improvement to hospital employees who suffered from conditions of nutritional excess (diabetes, hypertension, obesity, etc.); 2) to begin the process of establishing a Hawaiian diet food-line at Maui Memorial Hospital for the benefit of hospitalized patients who were on the diet at home and for those who could medically benefit from being placed on the diet, including hospital staff.

This program became a joint effort of the dietary department and kitchen of MMH and the *Hui No Ke Ola Pono*. After months of preparation, the dietary participation program took place in January 1994 over 3 weeks in the cafeteria of MMH and all participants agreed it was a success. All participants experienced improvement in their health status, their feeling of well-being, and their sense of empowerment over their health.

The follow-up in the post-dietary period has been less than satisfactory, however, with the majority of participants reverting to previous dietary habits. This points out a common problem in the Hawaiian diet program as a whole: Substantial recidivism. In addition, the goal of establishing Hawaiian traditional foods on the food-line has not been achieved.

This paper will review and analyze the elements of the program as performed at MMH and propose future directions to further promote this important movement.

Maui Memorial Hospital Dietary Participation Program

Organization, Funding, and Division of Responsibilities.— From the inception of the idea of the Nutrition Committee of MMH to engage the *Hui* to bring the Hawaiian diet to MMH in the Spring of 1993, initial meetings were held over several months during which issues of authority, responsibility, and timing were discussed and agreement reached between the *Hui* and MMH.

A time line was developed and responsibilities were delineated. Issues of location, logistics, funding and division of labor were addressed as follows:

- Site and Equipment. The MMH kitchen and dining room were used as the cooking, educational, and dining area. Kitchen equipment was used without modification. Food preparation: Breakfast at 4 am to 5 am; dinner at 1:30 pm to 3:30 pm.
- Funding
 - *Hui No Ke Ola Pono* utilized grant monies for research program and oversight personnel.
 - The cook and small staff were paid from participants' fees.
 - Participants paid $5/day for program participation.
 - Food was purchased via the hospital food purchase budget.
 - Laboratory was paid for by insurance or personal payment.
- Program Elements and Division of Responsibility
 - Meal preparation was performed by the cook and her small staff with help from members of the MMH food service staff.
 - Dietary and health instruction was provided by the nutritionist, nurses, physician and invited lecturers.
 - Orientations, public meetings, and interviews and participant selection were organized and presented by the *Hui*, nutritionist, past patients, MD, and nurse.
 - Lectures and group presentations were given by invited lecturers, *Hui* staff, nutritionist, and nurse.
 - *Hulacize*, a form of hula and exercise done daily by the participants, was lead by the *Hui* and volunteers.
 - Scheduling of employee participants was done by dietary department, nursing department, other participants' departments, and *Hui*.
 - Research functions.
 1) Data collection and tabulation was performed by dietary, nursing, and the *Hui*.

2) Data analysis and publication was performed by the *Hui* and a physician.

Participant Selection

- Ethnicity.—Participants were selected preferentially, though not exclusively, from Hawaiian-ancestry kitchen staff and hospital staff.
- Health status.—Obese, hypertensive, diabetic participants were selected preferentially; persons with renal disease and cancer were excluded.
- Screening and selection were based on *Hui* criteria and procedures.
- Medical supervision
 - Each participant had a personal physician willing to pre-evaluate the participant and sign appropriate forms and releases.
 - The overseeing physician for the course monitored each participant throughout the course of the diet.
- Laboratory.—The personal physician ordered lab tests and the overseeing physician interpreted the lab work required by the protocol.
- Hospital personnel
 - Dietary department personnel needed some program modification so they could perform their duties and attend the program.
 - Nursing and other staff members needed to obtain relief from the heads of their departments so they could reliably participate during working hours.

Methodology

- Participant Selection Process.
 - Initially, a questionnaire was distributed to the medical staff to elicit physician knowledge and acceptance of enrolling patients into the Hawaiian diet. Once positive response among the physicians was ascertained, two public information meetings were held for the hospital staff, after which interested staff were asked to sign a list indicating interest in participating in the diet program.
 - Interviews were then conducted and participants were selected on the basis of appropriateness, eagerness, and health status.
- Participant preparation.
 - Smoking and drinking alcohol and coffee were discontinued for at least one week prior to the initiation of the study.
 - Laboratory tests were conducted several days before the initiation of the study.
- Diet.
 - Pre-program.
 1. A 3-day diet history was obtained for each of the participants.
 2. Participants were instructed to cut down on caloric intake a few days prior to initiation of the program.
 - Program.
 1. All food was prepared in the kitchen of MMH by the cook and her staff, with the help of 2 kitchen staff participants.
 2. The first week's diet consisted of traditional Hawaiian dietary foods (taro, poi, sweet potatoes, breadfruit, fish, chicken, watercress, oranges, bananas, and seaweed) with a transitional diet incorporating Western foods introduced the second week.
- Exercise.— Walking, stretching, and "hulacize" were offered just prior to the evening meal daily.

Results

(All values represent mean and standard deviation; p values not calculated due to the small number of subjects and large variations in values).

- Participant Profile. (Table 1).
 - Sex: One man participated (No 15), all others were women.
 - Age: The mean age was 41 + 7.7 years, with a range of 30 to 50 years.
 - Ethnicity: 8 of the participants were of mixed Hawaiian ancestry; 12 were Asian (4 pureblood); and 4 were Caucasian.
 - Obesity: 11 of the 17 participants were over 20% of their ideal body weight; 8 of the participants were over 50% of their ideal body weight.
 - Diabetes mellitus: 5 of the participants were diabetic, 3 of whom were insulin dependent.
 - Hypertension: 6 of the participants were hypertensive on medication at the initiation of the study.
- Physical parameters (Table 2; Fig 1)
 - Weight: 17 participants weighed an average of 217 lbs at the start of the study. The average weight at Week 1 was 209.6 lbs. The weight at Week 3 was 206.9 lbs. The average weight loss at the end of the 3-week period was 10.3 + 6.2 lbs. Those participants with the greatest weight-loss had the largest amounts of weight.
 - Blood Pressure: the average systolic blood pressure was 130.3 mm Hg at the start of the study, decreasing to 123.5 mm Hg on Week 1, and to 114.8 mm Hg on Week 3. Diastolic blood pressures were comparably reduced throughout the course of the study; blood pressures dropped in both hypertensives and normotensives.
- Biochemical values (Table 3).
 - Glucose: initial values for glucose averaged 132.0 mg% falling to 125.3 mg% on Week 1, and to 107.2 mg% by Week 3. Participants on insulin were able to substantially reduce their dosages of insulin (Nos 7 and 8) or discontinue insulin and start oral hypoglycemic medication (No 9). Two participants who were not on medications (Nos 2 and 10) had substantial drops in their glucose values during the course of the study.
 - Cholesterol: initial values for cholesterol averaged 185.9 mg%, which fell progressively to 169.6 mg% by Week 1,

Table 1.—Demographic Data on 17 Participants in the MMH Hawaiian Diet Program

Pt	Age (yrs)	Ht	Wt	Race	Condition
1	59	5' 2"	115	A	–
2	35	5' 7"	401	C	OM, HTN, O
3	49	4' 11"	126	A	–
4	39	5' 4"	323	A	O
5	49	5' 6"	274	H, A	HTN O
6	44	5' 8"	271	H, A	–
7	30	5' 2"	132	C	DM
8	35	5' 4"	215	H, A	DM, HTN, O
9	38	5' 3"	208	C	OM, HTN, O
10	50	5' 3"	168	H, A	OM, HTN
11	44	5' 3"	128	H, A	–
12	33	5' 1"	126	A	–
13	33	5' 4"	271	H, A	HTN, O
14	43	5' 4"	245	H, A	O
15	45	6' 2"	191	C	–
16	36	5' 6"	234	C	O
17	34	5' 6"	180	H, A	O

A = Asian, H = Hawaiian, C = Caucasian
HTN = hypertension, O = obesity, DM = diabetes mellitus

Table 2: Weight, Systolic and Diastolic Blood Pressure Values for 17 Participants in Hawaiian Diet at MMH

	Weight (lbs)				Systolic BP (AM)				Diastolic BP (AM)			
	Start	1st Wk	End	Change*	Start	1st Wk	End	Change*	Start	1st Wk	End	Change*
1	116	115	115	-1	136	128	122	-14	90	78	80	-10
2	401	383	374	-27	152	132	140	-12	108	94	94	-14
3	126	124	122	-4	137	110	122	-15	89	66	80	-9
4	323	316	313	-10	117	108	96	-21	94	68	70	-24
5	274	264	259	-15	140	140	140	0	91	88	90	-1
6	271	258	255	-16	120	98	90	-30	50	68	52	2
7	136	132	129	-7	113	120	118	5	77	74	72	-5
8	215	209	209	-6	150	160	150	0	86	90	96	10
9	288	277	273	-15	155	150	136	-19	69	70	84	15
10	168	162	156	-12	146	136	100	-46	102	88	78	-24
11	128	122	122	-6	134	106	104	-30	94	72	74	-20
12	126	122	119	-7	96	92	90	-6	73	76	64	-9
13	271	260	259	-12	150	148	–	–	104	82	–	–
14	245	235	230	-15	130	126	118	-12	86	88	86	0
15	191	183	183	-8	125	122	110	-15	80	82	80	0
16	234	228	224	-10	110	106	90	-21	80	80	72	-8
17	180	174	176	-4	104	118	110	6	66	70	68	2
Mean	217.2	209.6	206.9	-10.3	130.3	123.5	114.8	-14.3	84.6	76.3	77.1	-6.9
STD	79.0	75.4	73.9	6.0	17.5	18.6	18.8	13.4	14.4	8.8	10.1	10.7
N	(17)	(17)	(17)	(17)	(17)	(17)	(16)	(16)	(17)	(17)	(16)	(16)

*Difference between start of study and end of study

Table 3: Glucose, Cholesterol and Triglyceride Values for 17 Participants in Hawaiian Diet at MMH

	Glucose (FBS mg%)				Cholesterol (mg%)				Triglycerides (mg%)			
	Start	1st Wk	End	Change*	Start	1st Wk	End	Change*	Start	1st Wk	End	Change*
1	98	89	90	-8	218	228	186	-32	101	86	86	-15
2	236	142	123	-113	213	229	193	-20	164	162	133	-31
3	82	92	84	2	180	174	154	-26	77	131	78	1
4	109	108	97	-12	217	159	189	-28	150	153	154	4
5	113	100	95	-18	149	132	111	-38	85	100	76	-9
6	93	99	97	4	176	189	147	-29	93	90	91	-2
7	121	87	90	-31	138	139	144	6	33	60	38	5
8	341	318	–	–	220	114	–	–	342	244	–	–
9	220	287	225	5	169	157	147	-22	87	90	78	-9
10	144	126	133	-11	225	202	193	-32	162	160	144	-18
11	100	99	97	-3	170	121	136	-34	64	25	31	-33
12	95	94	–	–	151	142	–	–	59	54	–	–
13	90	91	–	–	160	139	–	–	54	–	–	–
14	107	108	91	-16	205	215	163	-42	130	110	98	-32
15	89	87	89	0	251	173	246	-5	131	52	100	-31
16	110	106	99	-11	171	168	136	-35	323	169	183	-140
17	96	97	91	-5	148	202	163	15	51	66	65	14
Mean	132.0	125.3	107.2	-15.5	185.9	169.6	164.9	-23.0	123.9	109.5	96.8	-21.1
STD	67.3	66.4	35.2	28.6	32.4	35.4	32.7	16.3	85.4	55.09	41.7	36.2
N	(17)	(17)	(14)	(14)	(17)	(17)	(14)	(14)	(17)	(16)	(14)	(14)

*Difference between start of study and end of study

and 164.9 mg% by Week 3. Twelve of 14 participants had substantial drops in their cholesterol levels, without relation to their initial values.

- Triglycerides: initial values for triglyceride averaged 123.9 mg%, which fell progressively to 109.5 mg% by Week 1, and to 96.8 mg% by Week 3.
- No significant changes in electrolytes, liver, and renal functions were seen in the group as a whole throughout the study.

• Antihypertensive medications: the 6 hypertensive participants initially had a dramatic fall in their blood pressures, necessitating a diminution in their dosage of antihypertensive medications. However, by the third week, doses had to be increased again, but below pre-diet levels.

• Diet records. (Tables 4)

- Average caloric intake declined from pre-program level of 2,287 calories to a Week 1 value of 1,529 calories.
- Average fat content of the pre-program diet was 39% of the total caloric intake, which was reduced to 5% on Week 1.
- Average sodium chloride content of the diet was 3,527 mg/24 hour pre-program, and down to 849 mg/24 hr by Week 1.

• Patient compliance and tolerance.

The diet program was tolerated by the majority of the participants without complaint or problem. There was only 1 dropout in the program, and this was because of work scheduling conflicts (A busy dialysis nurse). There were 3 participants who felt nonspecific symptoms such as weakness, dizziness, fatigue, and hunger during the first few days of the program, but these symptoms resolved by the second week.

There was a high degree of fellowship and camaraderie developed during the program among the participants. For 3 weeks, 2 meals a day were eaten in a communal setting,and mutual support became a means for encouraging compliance and cross-education.

The formal program of instruction by the dietitian and by the speakers was supplemented by the participants own interest in their own health improvement.

Discussion

This program successfully demonstrated several things.

• A healthful diet based on the Hawaiian traditional foods could be prepared and served to a group of high risk Hawaiian-ancestry staff at a state facility in a supervised program without risk and with a high degree of compliance and acceptance.

• Although not as pronounced as the changes seen in the Waianae Diet Program study reported by Dr Shintani in 1991,[9] several very positive health outcomes were experienced by the participants. Hypertensives experienced a drop in blood pressure and decreased their medications. Diabetic staff had a decrease in blood glucose, and decreased their insulin requirements. Almost all participants lost a significant amount of weight. All participants, despite their medical backgrounds, learned a great deal about nutrition during the program, but in particular, learned that they were capable of eating properly for a sustained period of a few weeks, and that they could tolerate a healthy diet.

• Despite the complexity of the program, a high level of cooperation could be obtained between two state agencies, the *Hui No Ke Ola Pono* and Maui Memorial Hospital, to plan the program, divide responsibilities, define roles, and work together throughout the program without conflict or "turf battles."

• The kitchen and dining facility at Maui Memorial Hospital was adequate for the acquisition, preparation, and serving of the food, as well as providing adequate space for the communal eating and educational aspects of the program.

Problems experienced were:

• There was resistance among some kitchen employees to the program who said there was an imposition on them in terms of space requirements, and to a lesser extent, equipment use.

• Follow-up in the hospital for program participants has been severely hampered by the lack of staff and space in the kitchen to prepare an extra meal. A similar shortage of dietary staff has curtailed the ability to change the recipes to more healthful diets such that participants might be able to eat institutional food at their place of work that would be healthful for them and allow them to continue healthy eating. For this reason, most of the employees who participated in the diet program have been unable to continue their diet program. This has been the experience for most of the Hawaiian diet programs, and indeed for most intensive comprehensive dietary programs.

• Under current staffing and budgetary constraints in the state hospitals, there is no foreseeable time when the food line at the hospital could be modified to serve traditional foods to the hospital patients or staff who would benefit from the diet (ie,

those who have been through the program or those for whom it would be medically indicated as determined by their physicians).

Proposal for the Hawaii Department of Health

Since the Hawaiian diet program was an unqualified success at Maui Memorial Hospital resulting in the improvement of all major health parameters of the at-risk participants, we propose that the program be continued in a more formal manner throughout the state hospital system under the auspices of the Division of Community Hospitals of the Department of Health.

With the cooperation and help of the various Hawaiian health organizations, such as the *Hui No Ke Ola Pono* on Maui, and corresponding groups on the other islands, the dietary departments and kitchens of the state hospitals could be mandated to offer similar programs of Hawaiian diet to at-risk or willing employees on an ongoing basis, perhaps several times a year. Such programs could become the basis of a wider employee health program, including nutritional counseling, cholesterol monitoring, exercise and fitness programs, and counseling.

In order to maintain program participants on modified diets, the kitchens of our state hospitals would need to be able to prepare the basic Hawaiian foods on a daily basis as a routine product of the hospital and cafeteria food lines. This would not only serve employees who had gone through the program, but would also enable patients who had been through the program to continue their diets while hospitalized, and allow patients who had not been through a formal program to sample the traditional foods that they would be eating if they were to enter a program.

If these changes were accomplished, the next step would be for the hospitals to act as centers for community dietary training programs, where community members could come for formal programs of education in the preparation of traditional Hawaiian foods and modified diets. The same format of 3-week intensive programs such as have been offered to employees could be extended to community members on the premises of the hospital. In this way, our community hospitals would be engaging in the real practice of preventive medicine in the community at large, thereby fulfilling a major part of its strategic goal of becoming a real community medical center. Such a program would also engender cooperation with other community organizations, such as the Hawaiian health groups (*Hui No Ke Ola Pono*) which are underfunded to carry on such programs on their own.

In conclusion, it would be a real tragedy if the knowledge that has been acquired thus far in well-designed and successful scientific and cultural programs were not amplified and instituted in the most obvious and practical way available, in the community hospitals, which are supposedly the primary resource for health in the community at large. Such an expanded program would have great support in our community and certainly similar communities throughout the state. Our experience at Maui Memorial Hospital has demonstrated that such a program can be carried out easily, with minimal expense and staff, and can tangibly benefit the health of the participants. This experience should be extended to the community at large, and the community hospitals are a logical and practical place to accomplish this.

Acknowledgements:
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Fig 1. — Weight Changes in MMH

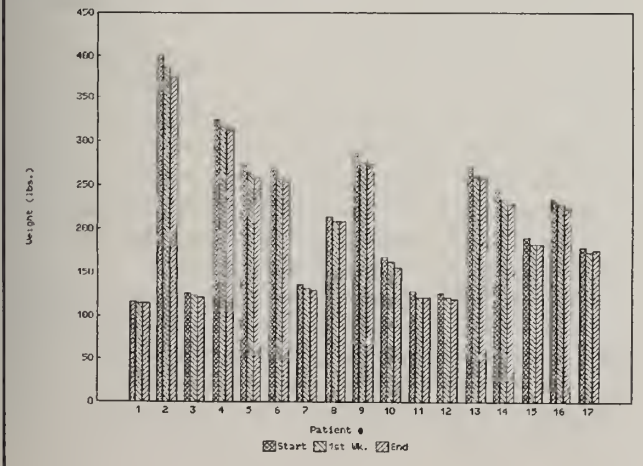


Table 4. Pre Diet an First Week Nutritional Values for 17 Participants in Hawaiian Diet Program at MMH

Patient	Calories (kcal)	Carbohydrate (gms)	Protein (gms)	Total Fat (gms)	Saturated Fat (gms)	Cholesterol (mgs)	Sodium (mgs)
PRE-DIET NUTRITIONAL VALUES							
1	2 439	291	121	78	22	385	4 202
2	2 131	200	79	121	29	135	1 040
3	1 485	189	77	50	16	267	3 187
4	2 835	313	93	122	48	349	2 505
5	2 191	272	64	103	23	81	2 232
6	1 857	257	69	65	23	219	2 502
7	2 165	255	92	86	21	363	3 885
8	1 513	193	72	50	13	263	2 111
9	1 919	183	84	95	25	494	3 394
10	3 256	293	118	149	49	544	4 738
11	1 785	204	66	64	20	220	1 378
12	2 889	274	136	139	45	711	5 413
13	1 367	122	58	75	12	98	2 449
14	4 014	489	153	164	45	782	7 421
15	3 053	288	141	148	49	630	5 670
16	2 645	286	107	119	44	539	3 173
17	1 345	126	77	49	15	382	2 666
Mean	2 287 cals	249 gms	95 gms	99 gms	29 gms	403 mgs	3 527mgs
STD	724	83	29	37	13	204	1 498
(% cals)		(44% cals)	(17% cals)	(39% cals)	(11% cals)		
N	(17)	(17)	(17)	(17)	(17)	17)	(17)
FIRST WEEK NUTRITIONAL VALUES* (One participant failed to submit dietary data to dietician)							
1	1 747	248	58	5	2	122	840
2	1 831	380	69	8	2	138	882
3	1 236	233	67	8	2	139	800
4	1 430	283	65	7	2	138	796
5	1 463	290	66	7	2	138	780
6	1 193	223	68	8	2	138	811
7	1 347	263	67	7	2	136	799
8	1 866	388	68	8	2	139	905
9	1 497	288	70	10	3	157	881
10	1 831	380	72	8	2	136	860
11	1 422	278	68	8	2	139	831
12	1 593	327	62	7	2	126	846
13	1 177	220	64	7	2	138	827
14	1 698	346	70	8	3	198	784
15*	—	—	—	—	—	—	—
16	1 649	334	69	8	2	138	852
17	1 476	401	84	10	3	165	1 064
Mean	1 529	305gms	68 gms	8 gms	2 gms	139 mgs	849 mgs
STD	251	59	5	1	0	10	67
(%cals)		(80% cals)	(18% cals)	(5% cals)	(1% cals)		
N	(16)*	(16)	(16)	(16)	(16)	(16)	(16)

Hawaiian Medicine

Robert T. Wong MD

Long before other societies of the world dared to sail the open seas, Polynesians, isolated from the rest of the world, developed the fundamental art of distant navigation. Before the second millennium, Polynesians sailed the thousands of miles to the relatively small land masses of Tonga, Tahiti, Samoa, and Hawaii. These volcanic islands, because of their origin and isolation, possessed few plants and animal life necessary for human survival.[1] The Polynesians who settled Hawaii used their astounding knowledge of astronomy, meteorology, and navigation to undertake the sailing expedition of over 2,000 miles to Tahiti and Marquesas to bring back the necessary plants and animals to sustain life for a large group of people.

The progressive subjugation of the Hawaiian nation began with the discovery of the Sandwich Islands (Hawaii) by Captain James Cook in 1778, and the visit of Captain George Vancouver in 1793. Justifying the conquest, historians regarded the natives of the Sandwich Islands as primitive neolithic beings who lacked a written language. They depicted the Hawaiians as savages: Constantly engaged in territorial warfare, wearing little or no clothing, worshipping many idols, not believing in monogamy, totally immoral, engaging in infanticide, and occasionally offering human sacrifices with religious ceremonies. The Hawaiian social order was castigated. They falsely claimed the ruling class controlled the lower caste as slaves, engaged in sexual relationships with and intermarried close relatives; they imposed many *kapu* (restrictions) on the women, including food restrictions and isolation in compounds during their menses. "They are firm believers in sorcery. With reference to their sick, there is no possibility that these primitive beings could possess any knowledge of botany and the medicinal uses of plants and other substances..."[1]

A proper evaluation of Hawaiian medicine requires a firm contradiction of false concepts promulgated by biased historians regarding all Hawaiian history and culture (Corroborated in a conversation with Dr George Mills, 1980).[1] A proper evaluation must also look at the quality of life in the Western world at the time. The noted Scottish poet Robert Burns, we know, was a contemporary of Captain James Cook and George Vancouver. Burns wrote of the Thames River contaminated with sewage, amputation of the hands of women who were caught stealing bread, his dread of living beyond 43 years (the normal lifespan of the people of his period), and his imprisonment in the last days of his life because he owed a debt of 10 pounds. No one can refute the injustices found throughout the history of Western civilization: Burning of so-called witches at the stake in New England and central Europe, the massacre of the American Indian, the shooting of Australian aborigines when they came for drinking water at the watering pens, and the fact that slavery in the United States did not end until 1865 after one of the greatest civil wars of all humankind. The relationships and marriages between relatives of Hawaiian royalty that were branded as barbarous consanguious relationships and incest were contemporarily sanctioned by the Church of England and the Vatican for European royalty.

I clearly recall Dr Charles Judd's evaluation of Western medicine during the discovery era. At that time, puerperal fever was rampant in England and Europe, especially in maternity hospitals where spread of the infection was promoted by the unwashed hands and instruments of attending personnel. Regular bathing was an unknown ritual at that time. Only much later, in 1847, L.P. Semmelweis of Vienna called attention to the washing of hands with antiseptics before attending women during childbirth.

Digitalis was first introduced into medicine as a diuretic for dropsy in 1775 by William Withering of Birmingham, England, who recognized the dried leaf of the common foxglove as the active ingredient of an old woman's secret formula. It was not used for cardiac dysfunction until much later. In 1795 the British Navy mandated the use of lime juice for its sailors on long ocean voyages, when it was discovered that limes, lemons, or fresh vegetables were necessary to prevent scurvy. In 1798 K. Jenner introduced cowpox vaccinia as an immunization against smallpox. W.T.G. Morton demonstrated in 1846 the potential of ether as a surgical anesthesia. Venesection (blood letting) and the use of leeches were used for many diseases. There was no effective medication for pneumonia, infectious diseases, or sepsis. In the period as recent as 1936 at Jefferson Medical College Hospital, renowned for its surgery and treatment of infection and where I served my 27-month internship, only the following important medications were available:

- Insulin for diabetes–discovered by Banting and Best, 1922.
- Digitalis
- Atropine and belladonna–derived from *Atropa belladonna* and known to the ancient Hindu.
- Morphine–derived from the poppy plant, isolated in 1803.
- Quinine–derived from the bark of the Cinchona tree. The Indians of South America used it for more than two centuries, but quinine was not isolated until 1820.
- Colchicine–derived from autumn crocus and used for gout.
- Theophylline–a purine derived from tea leaves and used as one of the major drugs for bronchial asthma.
- Cocaine–derived from cocoa leaves.
- Ephedrine–derived from the *ma huang* plant indigenous to China.

- Adrenalin
- Oxytoxin
- Oxygen
- Ergotamine
- Anesthetics

Pneumococcal immune serum for lobar pneumonia was in early prominent use. The first use of Prontosil, a sulfonamide compound received much publicity. Because of the lack of effective measures of treatment, my tenure in the pediatric service was mixed with moments of despair. During that period only 3 out of 4 children admitted for the treatment of pneumonia survived.

In contrast, despite its physical isolation, the Hawaiian botanical pharmacopoeia of the discovery era is believed to include more than 100 plants used in and believed to be of beneficial effect. Only a few of the more prominent are listed:

- *Popolo*.–Used for respiratory infections. Poultices prepared from the leaves was a favorite choice for boils, burns, and wounds .
- *Awa* plant (*kawa*, *kava*).–A drink prepared from the root provided the ceremonial beverage of the South Pacific Islands. Chewing the root definitely relieves pain. Drinking the root stock causes sensory and muscular paralysis. The alcoholic content of the fermented root provided the alcohol that effected a sterilization of wounds.
- *Kukui* nut.–The kernels undoubtedly had a laxative effect. There are many Hawaiian plants that produce a profound laxative effect and were regarded as purgatives to treat systemic edema.
- *Noni* .–The leaves and bark are prepared as a tonic and are used to treat urinary disorders and muscle and joint pains.
- *Puakala*.–A Hawaiian poppy related to the opium poppy, it is a favorite medicine for killing pain.
- *Ulu*.–Sap from the stem of the *ulu* (breadfruit) was useful in the treatment of stomach ulcers; it is still commonly used in Samoa for that purpose.
- *Ohia lehua*.–This plant is native to Hawaii and Polynesia; the flower is used to ease childbirth and leaf bud tea is used as a tonic and to treat colds.

In the highly structured Hawaiian society, the medical *kahuna* administered to the sick. In ancient Hawaii, *kahuna* were far more than priests of a religious order, mystics or sorcerers, or the medicine men of primitive tribes. They were selected in childhood because of their high intelligence and their ability to learn. They were usually selected from the families of the ruling class, occasionally of the *kahuna* and rarely from the commoners. The *kahuna* were the scholars and educated professionals of their time. They used their well-developed powers of mind analysis, thought control, and hypnosis to the fullest on conditioned subjects, with frequent references to *akua* or spirits and gods.

Long before Linnaeus devised the system of plant taxonomy, the *kahuna* in Hawaii had already evolved a classification system of plants. Both Drs Charles Judd and George Mills had very positive opinions that careful selection and long periods of preparation and education were necessary to become a Hawaiian medical practitioner.

Referring to Charles Judd,[4] other authorities and the Bishop Museum Bulletin of 1934,[2] the medical *kahuna* could be classified as:

- *Kahuna laau lapaau*.–Pharmacologist and general practitioner
- *Kahuna lomilomi*.–Physiotherapist, masseur
- *Kahuna haha*.–Diagnostician
- *Kahuna koholua*.–Surgeon (minor surgery)
- *Kahuna hai iwi*.–Bone specialist
- *Kahuna hoo hanau*.–Obstetrician

There was extensive specialization among medical practitioners. One prominent medical practitioner was the *kahuna hoo hanau*.[1] Beginning with early pregnancy, the *kahuna hoo hanau* prescribed exercises that would be helpful at parturition. They used external deep abdominal massages to change the position of the fetus to the proper position for delivery. Changing of the transverse position was considered to be a relatively easy maneuver. Converting a breech position to the normal cephalic position was considered difficult but always possible. Dr George Goto informs me that these procedures are carried out by modern obstetricians and are referred to as external version. Puerperal sepsis was not common because there was no invasion of the delivery channel by attendants and because of the cleanliness of those attending. Prominent in the history of Hawaiian medicine was the common use of psychic transfer of labor pains to the spouse or other immediate member of the family.

Psychiatric treatment was rendered by professional medical *kahuna*, many with special mystic powers. A positive response to the ministrations and decisions of the *kahuna* was possible because the populace was conditioned to access the powers of the *akua* who governed their lives; the *kahuna* were regarded as the *akua*'s messengers. There are reports by credible authorities of the missionaries that on occasions when the *kahuna* informed a subject that there was no cure for a condition and death would ensue, the subject would then go home, lie on a mat and die. The psychiatric *kahuna* rendered many sessions of personal care, using his skill of analysis, often his mystic powers and perhaps some potent herbs.

In examining the accomplishments of the Hawaiian in the medical field, it must be acknowledged that we have only fragments of information of their scientific knowledge and some of the knowledge handed down could have been altered. Despite the loss of a large part of the art of Hawaiian medicine, evidence remains to indicate that Hawaiian medicine was a very superior art at the time of the discovery era. Very definitely, modern applications of Hawaiian obstetrical practices and that of the care of the mentally ill are very beneficial. A number of investigators have attempted to isolate the pharmaceutical elements of plants used in Hawaiian medicine; Drs Nils P. Larson noted this in a personal conversation in 1934, F.L. Tabrah, F.B.M. Eveleth,[3] and in 1970 Dr Windsor Cutting had very limited success in doing so. Studies on the isolation of active medicinal properties of Hawaiian medicinal plants are still continuing.

Unfortunately, too little remains of the practices of the trained medical *kahuna*. The development of an organized society of over 300,000 people by a small band of Polynesian voyagers on a small, isolated land mass—the Hawaiian Islands—is, however, irrefutable evidence of the superiority of the medical management of a remarkable society.

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steroids, a drop in IgE, and alteration to interleukins. The *SFA* was cost-effective compared to the pretrial use of medication.

Conclusions

Among the herbal therapies for asthma used in Hawaii for centuries is *mamane*, or *S. chrysophylla*. It has the potential for excellent patient compliance, clinical improvement, and few side effects at a low cost. A review of the known scientific facts of this medication supplemented by those of the closely related species, *SFA*, suggests that *mamane* should be further assessed. An extract of the root of *S. chrysophylla* of research quality should be prepared for suitable scientific research.

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Smoking habits were also assessed in this preliminary analysis. Twenty-seven percent of 101 NHHR participants were current smokers, a somewhat smaller proportion than was reported in the Molokai study (Fig 3). Approximately half of the participants admitted to having smoked at least 100 cigarettes during their lifetimes (Fig 4).

Hypertension, another important CVD risk factor, was also prevalent in NHHR participants. Thirty-eight percent of all participants met study criteria for hypertension (a systolic pressure greater than 140, diastolic pressure greater than 90, or a history of hypertension).[22] Of those reporting a prior history of hypertension, 60% had either a high systolic blood pressure or diastolic blood pressure, an indication their hypertension was not well controlled. Moreover, 38% of the known hypertensives were not taking antihypertensive medications at the time of NHHR screening.

Analysis of the extensive questionnaire on current and past leisure and occupational activity levels was not yet available for this preliminary report; however, a list of the 10 most common activities participated in at least 10 times in a lifetime was compiled (Fig 5). Only 3 of these 10 activities are considered to adequately sustain aerobic activity that is sufficient to reduce the occurrence of CVD and NIDDM.

Discussion

The preliminary findings of the NHHR Project appear to support and confirm the findings of other studies that there is a high prevalence of NIDDM in Native Hawaiians. The use of well-established and rigorous methods to obtain data has allowed this project to ascertain additional information which will provide explanations of the disproportionately high prevalence of CVD in Hawaiians. The discovery of undiagnosed NIDDM and IGT in NHHR participants provides new information of the cryptic nature of glucose intolerance and the risk for CVD and NIDDM in Hawaiians. However, data collection and analysis is incomplete and premature interpretation of the preliminary findings may be unwise.

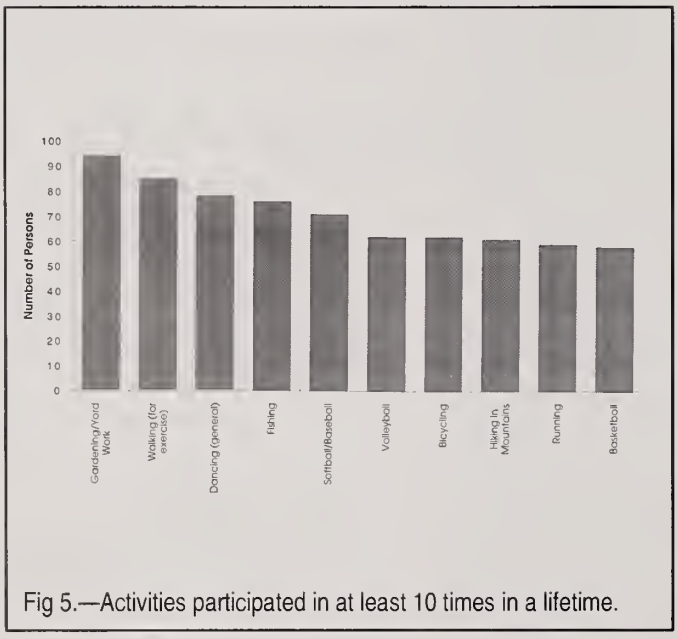


Fig 5.—Activities participated in at least 10 times in a lifetime.

The proper emphasis of this report is to demonstrate that an accurate assessment of diabetes and CVD risk factors are possible with a community-based research effort. The passage of the Native Hawaiian Health Care Act and the creation of *Papa Ola Lokahi* and the Native Hawaiian Health Care Systems have established a new protocol for all community-based initiatives. There are, however, very few models of successful collaboration between Native Hawaiian communities and researchers at the university; thus, the development of a partnership between the RCMI Program and the Hawaiian community should be considered as forging new ground. The results presented in this article, however preliminary, must then be considered as a successful and revisited model of community-based research. For the RCMI researchers, the experience so far has been a learning process in uncovering which types of approaches to every aspect of clinical research will work in certain communities. We have learned that the community directs the flow of information about its health concerns, and sometimes federal and university-related deadlines are not applicable. Through the continued cooperative effort of the community of North Kohala, the *Hui Malama Ola Na Oiwi*, other Native Hawaiian health care organizations, and the RCMI Program, definitive information that is needed about the health status of Hawaiians will become available in the near future. In addition, future collaborative efforts to develop intervention and prevention programs should be on the horizon.

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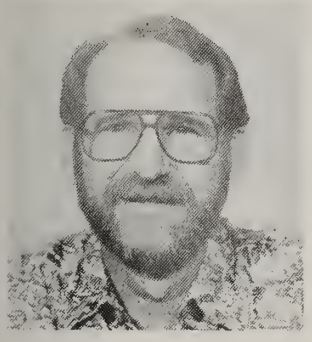
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News and Notes Henry Yokoyama MD

Life in These Parts

Avid golfer and ole high school classmate, **George Ishida** reports that his game is better than ever since his bilateral knee replacements and recites the following ditty: "I've got metal in my right knee; I've got metal in my left knee, all I need now is metal in my weenie."

Hawaiian Rent All Signs (Corner of McCully and Beretania).— "Cut Too Many Corners and You'll Go Around In Circles"; "It's A Tough Job Finding An Easier One."

Quotes from Paul Harvey on KHVH.— "The courtroom lawyer asked the prospective jurors, 'Has anyone in the courtroom a real dislike for lawyers?' No one dared respond, except one—the judge." (Sep 23)

"Pastor Smith took a vacation in Hawaii with his video camera. He told his congregation how the first generation of missionaries taught the natives to put on clothes. Now the new generation of American tourists are teaching the Hawaiians to remove their clothing. He has video film to prove his point." (Sep 28)

Bumper Stickers.—"Commit random acts of kindness and senseless beauty." "My Boss is a Jewish Carpenter."

Memorable moments.—"Ladies and Gentlemen—the forces of good and the forces of right have defeated the Clinton Health Care Plan." (Rush Limbaugh on KHVH, Oct 1)

This Summer's Epidemic.—Straub orthopod **Gerald Mayfield** sees more injuries with in-line skates now than with skateboards in the past. The Consumer Product Safety Commission reports 37,000 people were injured last year and expects 83,000 cases this year; 60% of the injured are children under 15. About 23,000 injuries will be fractures and 7,000 will be head injuries. The AMA acknowledges in-line skating as the fastest-growing recreational sport.

Kapiolani pediatrician **Marian Melish** says, "We think most of the injuries are completely avoidable if the patients use wrist guards. My husband and I are very fond of roller-blading, but we always go out completely padded."

A complete set of safety gear (at McCully Bicycle) with elbow, knee and wrist guards is $40 and helmets another $40. Marian says, "It's not nerdy to wear padding. They don't have to look like frumps. Just wear wrist guards." But Gerald Mayfield recommends the works, ie, wrist supports, knee and elbow pads, and a helmet.

Medical Information via the Lay Press

Researchers at Boston's Brigham and Women's Hospital report that in a study of 9,411 people aged 65 and older with hypertension, NSAIDs may be a contributing factor.

Johns Hopkins School of Medicine researchers found that heavy caffeine consumers given a placebo instead of caffeine developed headaches, fatigue, and depression. Eric Strain reported in *JAMA* that caffeine exhibits features of a typical psychoactive substance of dependence. Physicians should advise patients who experience adverse effects to taper off their coffee consumption .

The National Center for Health Statistics reports that nearly 54% of a group of 8,145 three-year old children were given some sort of nonprescription medicine during the previous 30 days. "Evidence that these (cold) medications are inefficacious and may, in some circumstances, have adverse effects has apparently done little to dampen enthusiasm for their use."

Doctors' Handwriting

It seems that one in 25 hospitalized patients suffer adverse reactions caused by prescription errors. The AMA Board of Trustees is recommending that physicians practice their penmanship or print or type their prescriptions. Percy Wootton, a Board of Trustees member blames bad habits picked up in med school. "In my vintage, we were bombarded with the old lecture method. We took notes as fast as we could and a lot of us couldn't read our own notes when we got home." (It brings back memories.—HY)

Medical Humor—Condensed Excerpts from *Stitches*, the medical humor magazine

When I Was A First Year Medical Student by F.R. Spicer.—One Monday morning we had a didactic session on cardiac murmurs. We were then turned loose on a patient who we'd been told had "some cardiac findings." The patient turned out to be a shy 70-year-old widow. While listening to her heart, I realized that for once I actually heard a murmur!

I knew I'd be grilled about the grading of the murmur. I hastily put my hand on her chest to see if I could feel the murmur through the chest wall.

She looked at me and asked, "What are you checking for, young feller?" "I'm feeling for a thrill," was my absentminded reply.

She gave me an understanding look, took her blouse off, pulled up her bra and said, "You go ahead and enjoy yourself, young feller—I ain't dead yet myself."

True Confessions by Howard Shiffman.—(A colleague related the following incident that occurred while he was an intern in ER)

A young woman in her teens was admitted complaining of abdominal pain. The attending physician, after the usual barrage of questions, asked her if she was sexually active. Sheepishly she looked up and replied, "No, I just lie there."

Conference Notes

Lecture by Robert Schoene at Kahala Hilton on June 22, 1994. Sponsored by Glaxo and American Lung Association.

Introduction: Charles Darwin postulated that everyone's different. Species are different with differences within species. Otherwise medical therapy becomes all rote.

History of asthma therapy: In 1500 BC, Egyptians treated asthma with excrement of camels and crocodiles. In 1000 BC, Chinese used *ma huang* ephedrine. In 400 BC, Hippocrates used sulfa and arsenic inhalations.

Asthma prevalence in the U.S.: Incidence of asthma rising, esp in ages under 20; deaths higher in African Americans.

Asthma etiology:
- airway obstruction
- airway inflammation
- airway sensitivity (smooth muscle reactivity to stimuli)

Asthma Sxs and Sys:
- episodic cough
- dry nonspecific wheezing
- chest tightness
- nocturnal awakening

Stimuli:
- cold air
- exercise
- air pollutants
- URI
- emotional stress
- strong vapors

Ddx asthma:
- mechanical obstruction
- laryngeal dysfunction
- chronic bronchitis
- emphysema
- CHF
- pulmonary embolism
- pulmonary infections with eosinophilia
- cough 2° drugs

Asthma—allergy: 75% to 85% positive skin tests; a/c allergic rhinitis (to pollens, molds); a/c, indoor pets (dander); vacuuming carpets; making beds (mites)

Pathophysiology:
- narrow airway 2° edema, smooth muscle constriction and hypertrophy
- basement membrane thickening and fibrosis
- inflammatory cells

Biopsies:
- inflammatory epithelium and mucosa
- eosinophils
- mast cell degeneration
- T cell infiltration
- epithelia cell damage

Airway:
- hyperresponsiveness
- inflammation
- epithelial injury

• smooth muscle dysfunction
• bascline airway obstruction

Goals of asthma therapy:

• maintain normal activity including exercise
• maintain normal pulmonary function
• prevent nocturnal symptoms
• prevent recurrent exacerbations
• avoid adverse effects of medications

Therapeutic components:

• patient education
• environmental control
• pharmacologic therapy
• objective monitoring

Pharmacologic therapy:

A. Inflammation:

1. Anti-inflammatory agents (inhaled steroids, cromolyn, etc.)

B. Bronchoconstriction:

1. Bronchodilatory therapy

a. Existing therapy: (inhaled B_2 agonists; theophyllines, etc)

b. New option: Salumeterol (Serevent)

Step therapy:

• Inhaled B_2 agonists
• Inhaled prophylactic corticosteroids or Cromolyn sodium
• High dose inhaled corticosteroids
• Theophylline
• Oral steroids
• Consider MTX

B_2 Agonists: eg, Salumetrol 40 mg bid; albuterol 80 mg qid

• bronchial smooth muscle relaxant
• inhibits histamine release from mast cells
• inhibits antigen
• bronchodilator
• lowers bronchial hyperresponsiveness
• tolerance (not significant)
• causes tachycardia with hypokalemia

Inhaled corticosteroids:

• improves asthma control
• adverse effects rare with doses under 800 mcg/d
• dose response variable

EIA (Exercise Induced Asthma):

• Airway reactivity in high level athletes
• Triggers for EIA
 - hyperventilation
 - cold air
 - dry air
 - mouth breathing
 - air pollutants
• Drug therapy for EIA
 - cromolyn sodium
 - inhaled B_2 agonists
 - theophylline
 - steroids (ineffective)
 - local anesthetics
 - Ca Ch B
• Step Therapy EIA
 - start with B_2 agonists before and after exercise
 - inhaled steroids
 - cromolyn sodium

Pearls of Wisdom

(Memorable words from Casey Stengel and Yogi Berra—*U.S. News* Aug 29 to Sep 5, 1994)

Casey Stengel.—"All right, everybody line up alphabetically according to your height."

"I made up my mind, but I made it up both ways."

"Being with a woman never hurt no professional baseball player. It's staying up all night looking for a woman that does him in."

"The secret of managing is to keep the guys who hate you from the guys who are undecided."

Yogi Berra.— "You can observe a lot by watching."

"It's deja vu all over again."

"If you come to a fork in the road, take it."

"Think! How the hell are you gonna think and hit at the same time?"

"Baseball is 90% mental. The other half is physical."

On why the Yankees lost the 1960 Series to Pittsburgh: "We make too many wrong mistakes."

"A nickel ain't worth a dime anymore."

On the tight 1973 National League pennant race: "It ain't over 'til it's over."

"If the people don't want to come out to the park, nobody's going to stop them."

"I really didn't say everything I said."

What Really is Worthwhile?

(Anna Robertson Brown-Wellesley Class 1883)

Only one life to live: We all want to make the most of it. How can we accomplish the most with the energies and powers at our command? What is worthwhile? We cannot possibly grasp the whole of life. What is vital? What may we profitably let go?

We may let go all things we cannot carry into eternal life. If we don't want to cumber our lives, there are four things we can do:

Drop pretense.—"Eternity is not for shams."

Don't worry.—"Worry is spiritual nearsightedness; a fumbling way of looking at little things; and of magnifying their value."

Let go of discontent.—"Make a heroic life out of whatever is set before us."

Let go of self-seeking.— "In the eternal life there is no greed. One hears of neither 'mine' nor 'thine.' All things are for all.

What are things in life that we should keep, guard, use? Eight values can enhance one's life.

• Be wise in the use of time.—The question of life is not 'How much time have we?' The question is 'What shall we do with it?'

• Value work.—But not any kind of work. Ask yourself: 'Is the work vital, strengthening my own character, or inspiring others, or helping the world?'

• Seek happiness each day.—"If you are not happy today, you will never be happy! Strive to be patient, unselfish, purposeful, strong, eager and work mightily! If you do these things with a grateful heart, you will be happy—at best at happy as it is given humans to be on earth."

• Cherish love.—"True love never nags; it trusts. Love does not have to be tethered; either in time or eternity."

• Keep ambition in check.—"There is the great danger of substituting intellectual ambition for ordinary human affections. Let us keep it in bounds; let us see to it that it holds a just proportion in our lives."

• Embrace friendship.—"It takes a great soul to be a true friend. One must forgive much, forget much, forbear much."

• Do not fear sorrow.—"Disappointment in life is inevitable. Pain is the common lot. Sorrow is not given to us alone that we may mourn. It is given us that, having felt, suffered, wept, we may be able to understand, love bless."

Cherish faith.—"Strong, serene, unquenchable faith in the loving kindness of God will enable us to look fearlessly toward the end of the temporal existence and the beginning of the eternal, and will make it possible for us to live our lives effectively, grandly."

(From *Reader's Digest* Jul 1994)

Doc's Dictionary

(Submitted by Fred Reppun)

Benign	What you are after you be eight
Morbid	A higher offer
Barium	What you do when CPR fails
Dilate	To live longer
Organic	Church musician
Outpatient	A patient who has fainted
Tumor	An extra pair
Varicose veins	Veins close together

Hawaiian Names for Doctors

Orthopedist	Kahuna haihai iwi
Dermatologist	Kauka ola ili
Neurologist	Kauka aalolo
Ophthalmologist	Kauka maka
Anesthesiologist	Kauka aoleeha
Gastroenterologist	Kauka naau
Rheumatologist	Kauka kuekue
Hematologist	Kauka koko
Proctologist	Kauka okole
Pathologist	Kauka pukapuka
Radiologist	Kauka nana i loko o ke kino
Psychiatrist	Kauka mai ma loko
GP or FP	Kahuna lapaau
Surgeon	Kauka kaha
OB	Kahuna hoohanau
Internist	Kahuna iki haha
Osteopath	Kauka lomilomi
Cardiologist	Kauka puu wai
Urologist	Kauka puupaa kaha
ENT	Kauka pepeiao
Pulmonologist	Kauka akemama
Student health	Kauka ona haumana
Physician's assistant	Kauka kokua
Allergist	Kauka pipi ka ihu
Pediatrician	Kauka o keiki
Laser therapist	Kauka kukui

The Weathervane Russell T. Stodd MD

The art of medicine consists of amusing the patient while nature cures the disease.

We all know the operative axiom: Write it down or it didn't happen. Now still another reason for such documentation comes from a Florida urologist. He cared for a Medicare patient in the hospital, providing services totaling $331. The patient called Medicare and said he never heard of the doctor. Now the physician has submitted documents to Medicare proving that he did in fact provide the service, but in the meantime the carrier deducted $331 calling the matter a "billing error." The event is still unresolved. HCFA has acknowledged that what happened in this case is not uncommon.

The primary responsibility of a supervisor is to discover what his or her employees are doing—and stop them!

The old song goes, "Who takes care of the caretaker's daughter while the caretaker's busy taking care?" In PRO argot, who watches the watchman who is watching you? In Massachusetts, Blue Cross/Blue Shield inflated the number of claims and reviews it processed, and has agreed to repay HCFA $2.75 million. A former employee of the insurance company blew the whistle, brought the lawsuit, and now HCFA has announced that all carriers and intermediaries must attest to the accuracy and truthfulness of the claims they file with Medicare. A doctor files a mistaken claim and is prosecuted, but the Blues steal millions and are merely obliged to attest that the theft won't be repeated.

About Health QUEST—experience is the name everyone gives to their mistakes.

A lawsuit pending against the Dept of Health and Human Services could impact Hawaii's Health QUEST program. The suit brought by the National Association of Community Health Centers seeks to prevent the federal government from granting Medicaid waivers to states pursuing reforms that greatly expand the use of managed care. If the court rules in favor of the NACHC, the DHHS would be forced to revoke the Medicaid managed care demo projects already underway in Hawaii, Oregon, Rhode Island and Tennessee. The NACHC says that it is not trying to stop DHHS from exercising its right to approve alternative Medicaid programs such as capitation; rather it objects to state payment systems that do not adjust for risk. The plan forces health centers to either abandon high-risk patients or to obtain public health grant funds that are intended for uninsured persons. Meantime Hawaii's Health QUEST remains a quagmire of confusion, commotion, chaos, clutter and cacophony.

The more things a man is ashamed of, the more respectable he is.

Possibly in a fit of conscience, Senator John McCain (R-Ariz) proposed elimination of free Congressional parking at Washington's Dulles and National Airports. Common folk must pay $26 a day, but Congresspersons, diplomats, and Supreme Court Justices park (perk) without charge. After suitable whining about Congress-bashing, the Senate defeated the proposal 53 to 44. Within five days, the sign that had defined the special parking lot was changed to read "Authorized Users Only." Annual lost revenue for the local airport authority is $1.6 million.

Every solution breeds new problems.

In the state of New York, Senator Galiber plans to reintroduce a Death With Dignity Act which will allow a physician to alleviate a terminally ill patient's suffering, even if that hastens the patient's death. In New Hampshire, a survey of physicians yielded 597 responses on the issue of assisted suicide. Over half—310 doctors—said that if it were legal, they would prescribe or administer a lethal dose of medication to a terminally ill patient, if requested. In addition, 11 doctors admitted they had already administered a lethal intravenous dose to dying patients. While Dr Kevorkian's arbitrary actions lack medical endorsement, he has pushed the issue into the public eye. Numerous studies have found widespread societal support for physician-assisted suicide.

Don't be roadkill on the information superhighway.

The information superhighway is being laid out across the medical world and ophthalmology will be a significant part of the action. Dr Froncie Gutman is the Academy's National Campaign Chairman of the Educational Trust. The goal is to raise $5 million to support new clinical education and technologies to deliver current data, documents, guidelines, knowledge, instruction, tutelage, exam guidance, or just about anything that can come through your home and/or business electronics. Think about it—we are barely entering the boundless sphere of computer-generated intelligence, and the Academy is going to position its fellows and members to access this ongoing fountain of data. Be prepared to participate when invited to contribute to the Academy's Educational Trust. We all need to be part of this investment.

No amount of words and music can turn a belch into an aria.

Samuel Pallin MD has written to the *Wall Street Journal* to support the absurd patent for his "new technique." He merely wants $2 royalty for each procedure when the surgeon uses his technique. In his letter he claims that the technique saves a $19 suture, and thereby saves the patient a net $17. Oh really? If Dr Pallin thinks that the intraoperative non-use of any item (eg, viscoelastic, miotic or suture) saves the patient a nickel, he should peruse a patient's facility-use statement. He further defends his cupidity by claiming that the Hippocratic Oath makes no mention of intellectual property or patents, so obviously it must be ethical. Not so, according to the American Medical Association Council on Ethical and Judicial Affairs, which stated, "The intentional withholding of new medical knowledge, skills, and techniques from colleagues for reasons of personal gain is detrimental to the medical profession and to society, and is to be condemned."

Addenda

▲ Governor Mario Cuomo has advocated legislation for mandatory physician recredentialing.

▲ Rock 'n Roll is monotony tinged with hysteria.

Aloha and keep the faith.
rts
■

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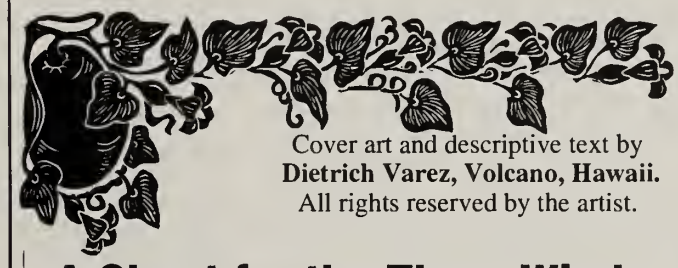
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A Chant for the Three Winds of *Molokai*

A hula chant tells of a giant calabash in which the goddess *Hina* kept three windstorms to release at will.

Hina's permanent residence is at *Kaluaaha*, a cave dwelling hidden at *Paoiki* Ridge. Protective eyes guard the *Koolau* district's *Wawahonuaaho*, the great wind gourd; sealed within are the three storms of *Hina*.

Hina opens slightly the gourd cover. The *Ilinahu* wind gushes forth from *Kamakou*. Trees are uprooted and thrown over as in the path of the *Ilinahu* and shrubbery is twirled, sweeping down and out to sea. *Hina* opens halfway the gourd cover causing skies to darken on *Pailolo* channel. Lightning flashes and thunder cracks shaking the island. Wild gusts of wind cause ocean floods; such is the way of the *Uluhewa* wind.

The worse storm is released, the *Luluku*. Crushed are the chiefs; crushed is the land. This is the way *Molokai* the child is protected—Great *Molokai*, child of the goddess *Hina*.

Editorials

Our First Year
Norman Goldstein MD, Editor

This issue marks the first anniversary of the *new Hawaii Medical Journal.*

In 1994 we published 47 manuscripts, we have a new look with the cover art by Big Island artist Dietrich Varez, our new regular columns "Medical School Hotline," "Military Medicine," "Historical Notes," and the "Hawaii Medical Association Alliance," along with our book reviews and letters to the editor, all have been received very well by our readers. We continue to be pleased with Dr Henry Yokoyama's "News and Notes" and Dr Russell Stodd's "Weathervane."

Our special issues on Organ Transplantation in March, Women's Health in September, and Native Hawaiian Health in December have received accolades. We are pleased to have received requests from Mainland medical journals for permission to reprint articles that have appeared in our *Journal.*

But a medical journal doesn't just happen without a tremendous amount of work. My heartfelt thanks to the authors, peer reviewers, advertisers, and a special *mahalo* to our dedicated HMJ staff.

What's ahead for the *Journal*? In addition to a wide variety of manuscripts, we will have three special issues in 1995:

- In April we will cover Medicine, Law, and Bioethics through the ingenuity of guest editor S.Y. Tan MD.
- In July we will discover the innovations of Military Medicine in Hawaii with guest editor Ben Berg MD.
- In November, co-editors Al Morris MD and John Breinich will outline the History of Medicine in Hawaii.

We also are considering several other special issues, including connective tissue disease, drug dependency, environmental issues, euthanasia and the right to die, geriatric medicine, medical school issues, new technologies in medicine, Oriental medicine—East meets West, an allied health issue, pediatric medicine, rehabilitative medicine, sexually transmitted disease, and sports medicine.

Stay tuned for more information, keep reading, and sending us your comments and your manuscripts.—NG. ■



AMA House of Delegates

Straight and True: Setting Medicine's Course for the 21st Century
James S. Todd MD
Executive Vice President

Mr Speaker, members of the House of Delegates, distinguished guests, ladies and gentlemen. Listening to John Seward a moment ago, I was struck when he said we were not going to just "talk the talk," but that we will also "walk the walk." And I thought—that means we need to know where we're going. And in the legends and lore of these beautiful islands, there are stories that can guide us.

You know, Hawaii was discovered more than a thousand years ago by epic island voyagers who were led first by circumstance and then by courage to venture far beyond their own horizons.

This is the most remote island chain in all the seven seas. How in the world did they find it?

Well, those early Polynesians were among the greatest ocean navigators the world's ever known. They had no maps. They had no instruments. No, instead they followed their own inner compass.

And they rowed their enormous wooden canoes always into the rising sun. The stars kept their course straight and true until they reached this land of lava and fire and ferment.

And now, just like those ancient mariners, this House of Medicine returns to these same fantastic islands determined to set our own steady course and eager to reach beyond our own horizons.

We certainly find ourselves in different waters since we last met. As Bob McAfee [AMA President] just told us, the great debate over health system reform is already a rapidly fading fable.

There will be no single sweeping wave of reform this year, or next year, or the year after that.

Instead, we will achieve change the way the public and many in this House wanted to in the first place—we'll do it the old-fashioned way—gradually, one step at a time.

But remember this: Although Washington was unable to unlock the gridlock in 1994, it will be a totally different political world when the new Congress convenes in 1995.

And we have already salted most pieces of pending legislation with policies straight from this House: Patient and physician protections. Anti-trust relief. Professional liability reform.

And while we kept these issues on the table, we succeeded in taking off the table the issues most onerous to most physicians: Big bureaucracy. Price controls. Quality control by government fiat.

The bottom line is: Comprehensive reform may have hit a brick wall, but the agenda of this House did not.

This is not to mean that we are in for smooth sailing. Far from it.

The private sector is full of hazards. Some are marked; some are unmarked.

Don't forget that while Washington

fiddled, the giant insurance companies and huge hospital networks were setting the marketplace on fire. And they touched off a gold rush out there that threatens to undermine quality and undercut patient care.

Don't get us wrong. We are not opposed to managed care. But we are opposed to managed profiteering. And left unchallenged, the managed profiteers in the private sector pose just as strong a danger as the heavy hand of big government in the public sector.

In the year ahead we plan to confront both.

That is not to say the federal government has no role. It does. The country needs the government to help set the rules, develop the guidelines, lay the foundation on which reform can be built.

And for physicians, our firmest foundation is patient protection. This is our agenda for the new year. And with Congress undergoing volcanic changes of its own, we will be able to advance our agenda.

But do not be lulled into complacency.

Yes, there will be a new mentality in Washington, one that can be friendly to medicine. But it is also a mentality that is down-right determined to cut the deficit and trim the budget—and that means Medicare.

The big battle in the next Congress will not be over health reform. It will be over Medicare, and it will be the mother of all Medicare battles.

I tell you now—we must be ready. You must be ready. The AMA must be ready if we are to come through the storms that most assuredly await us.

A few minutes ago, John Seward told us of the sea change in your AMA's mission and structure. And he told us the course corrections we must make for the voyage ahead.

Our navigators—your Board of Trustees—laid down our course. Let me tell you how we are following it. We clarified our mission. We tightened our focus.

We took a look not only at how to do our job. We looked at what that job should be. If it was part of our past, we put it aside. If it is part of our future, we put its name on our door.

We reconfigured our internal structure. We applied all the buzzwords of business management: Reconfigure. Reinvent. Reengineer.

And now we have a redefined AMA structure where form follows function.



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With the accelerating dynamics of computers and insurance billing, it made good business sense to work with Praxis. I did not want to worry about costly program upgrades, outdated technology, and the increasing flood of paperwork. Moreover, I was better able to manage our staff and focus them on patient outreach and education. A Praxis account manager is accountable to me and provides me with the information and control I need to run our clinic efficiently. The collective expertise of the organization and their vested interest in my success has been invaluable.

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Where operations are executed by four action groups. Their names describe the AMA of the 21st century. Standards. Advocacy. Federation. Business.

Let's take a quick look:

The first group is called Scientific, Educational and Practice Standards and Policy.

Setting the standards that guide our profession—this is the heart and soul of what this House and this AMA are all about. It's what Joe Painter tells us is the taproot of medicine. And it is the base root of our House.

And for our profession to remain deeply rooted, our standards need to keep up with the forces that are reshaping medicine every day. In this new world of cost containments and mega-sized mergers, the bottom line threatens to undermine the very quality of the care we provide.

So we created a new operations group to respond to what's happening in the marketplace.

This group has a clear charge: To develop and enforce the standards America's physicians must have if we are to fight off the forces that would diminish the quality of medical care our patients expect us to deliver.

The core of professionalism remains unchanged: Science. Education. Public health. Clinical care. And ethics.

These standards have been the AMA's cornerstone through the 19th and 20th centuries. And with new standards for how we deliver health care in this country they will remain our cornerstone far into the future.

This next group will make sure it happens. Its name is Health Policy Advocacy, and it does what it says.

This is our national action campaign team; it advocates health policy.

Communications, policy, lobbying—all clustered under the same umbrella, with the same purpose: To create excitement. To build public and political support for the principles and policies this House knows are necessary for physicians to deliver good health care to their patients. It's just that simple.

How we do it is going to look and sound different. Our advocacy will be more personal, more direct. It will be more like a real campaign. The private sector will become a Class A target. Success will be measured by impact.

The next group is where the needs of our profession intersect. It's called Constituency and Federation Relations and Membership.

Again, form follows function. The function is to make sure the AMA serves its members as the voice of American medicine. The form is this great partnership of physicians we call the Federation.

It is the leaders of the sections, the advisory committees, the medical societies, plus members new and yet-to-be, because together we are the profession!

And, in an all-new way, the public will be a part of the partnership, too, with a broad-based campaign to turn the public into well-informed, active advocates for the medical, scientific and public health issues that touch all their lives.

The fourth action group recognizes that the AMA is a major international business entity with products and services, markets and merchandise, real estate and investments. How we do as a business will determine how we do as an association.

Our success as a business is now the business of a new group called Business and Management Services.

Its job: Run our business like a business. Cultivate a new business culture within the AMA. Build the quickness and the keenness of the Association's business skills. Identify and develop new products and services that will add to our financial base and to your benefits as AMA members.

This, then, is what the AMA stands for today: Standards. Advocacy. Federation. And Business.

But our AMA is so much more than just boxes on an organizational chart.

Our AMA is people. You and me and all of us right here in this room. Plus literally hundreds of thousands more. All those physicians back home, present members and future members, from the ones fighting flu, to the ones curing cancer; doctors helping life begin, and doctors refusing to help life end.

We are as diverse as all America. But more than anything else we hold this in common: That whatever our trials and tribulations, we belong to the most exacting, the most exciting, the most rewarding profession there is.

You know, more than a century ago Mark Twain, of all people, made it all the way to these islands. Truly, he was a Connecticut Yankee in King Kamehameha's paradise.

And when he wrote about how he felt about Hawaii, he might as well have been talking about how most physicians feel about medicine.

Listen to what he said, and you decide if this is what medicine does to you.

He said:

"It haunts my sleeping and waking . . .

Other things leave me, but it abides."

Medicine is indeed a great journey—an epic voyage that takes us to places we couldn't possibly imagine—even in our wildest dreams. It haunts our sleeping and our waking. And I know that other things may leave us, but I believe it is medicine that will abide.

Thank you, and Godspeed in the work that lies ahead.

Drs Todd and Seward gave these speeches in Honolulu on Sunday, December 4 during the AMA House of Delegates Interim Meeting opening session.

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P. John Seward MD
Chair, Board of Trustees

Mr Speaker, members of the House of Delegates, distinguished guests, and ladies and gentlemen.

And what should I add when we're in Hawaii? *Aloha*—of course. *Aloha* is a warm and wonderful word that universally means: "Hawaii." We say it all the time. But do you know what *aloha* really means? *Alo* means to face and *ha* means breath of life.

Aloha. Literally to face the breath of life. And that's exactly what this House is: The breath of life of medicine.

So, *aloha*. This is why we are here. And it's why I'm here. Because I have a message for you today that turns face to the future and breathes the breath of the future into our whole profession.

As AMA Chair, you can be sure I have something pretty momentous to say on that score, so I've asked your Speaker's indulgence to come before this House today, before you even begin.

So, listen up! Because your Board has news to deliver to you this morning— news so essential to the work of this House that it will affect every decision you make as delegates, not just now, but years into the future.

The new AMA Strategic Plan you received along with your resolutions is far more than its name implies. Far more.

In fact, this so-called Strategic Plan is really a massive and strategic shift in our entire AMA mission and structure — what they call a paradigm shift, a virtual sea change.

And it makes quite a story.

Now we all know that nobody spins a yarn like Bob McAfee. Nobody.

So what I'm going to tell you today is not a fairy tale but there is a story behind it. It's a John Seward story, and it happened to me.

It started with a feeling we've all shared: I wanted to become a doctor, from the time I was a boy.

And I knew exactly what kind of doctor, too—a plastic surgeon. Caring for those to whom plastic surgery was anything but a luxury: Pediatric cancer patients. Accident victims. Burn patients.

But during my residency at the Mayo Clinic, I developed rheumatoid arthritis. My own hands were operated on, ending my surgical career, and bringing me, with a sudden kind of serendipity, to a small town in northern Illinois to work with a crusty old codger known as "Dr Bob."

You can imagine that I didn't think much of what he might know. How could I? I still knew it all myself, for Pete's sake.

So we worked out a kind of edgy peace. And we rocked along like that until one fall day when the phone rang to announce an emergency: A farmer with his hand and arm caught in a corn-picker.

We raced off, me grabbing my little black bag on the way—even though it hardly held more than a stethoscope and my sandwich for lunch—and the old doctor driving like mad in his beat-up Dodge, bouncing over dirt roads and crashing headlong through a fence—and directly into the cornfield.

And I'll never forget this: He was whistling the notes of "The Marseilles," the French national anthem. I was more along the lines of "Nearer My God to Thee!"

Suddenly it was over, and we were skidding to a stop, right beside that corn-picker. And he turned to me and slowly said, "So, doctor. Whatch'a gonna do now?"

All the arrogance went out of me. I was in real trouble. Because I suddenly had to admit they hadn't prepared me for corn-pickers in my days up at the Mayo Clinic.

And then old Dr Bob—cool as a cucumber—opens up his trunk, takes a screwdriver and a wrench out of his tool box, and with a little smile says to me:

"C'mon. I'll show you how to take a corn-picker apart to get a hand out. I do it all the time."

What medicine is facing today is no different from my experience in that cornfield: A crisis that tells us we can fix what's

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wrong so long as we have the right tools and are willing to use them.

But just like the corn-picker, it's a crisis that no one has ever prepared us for. A reality that's outside the rules.

Well, it's time for us to re-write those rules so we end up holding the edge on that reality.

Let us not forget that our AMA stands on a firm foundation that has served American medicine well through the generations: Advocating for the health of the public through the rigors of science and technology, and setting the standards of medical excellence itself.

This mission—this tradition—is as familiar to us as our own Hippocratic Oath. And it is on this solid, steady base that we will transform the AMA of the present into the AMA of the future.

Our vision is clear. This is what it is:

First, we will aggressively define and redefine the standards of health care delivery in a practice environment radically different from a generation ago.

One hundred forty-seven years ago the physicians of America came together "to promote the art and science of medicine and the betterment of the public health." At each critical crossroad in our history, physician leaders just like you—sitting in those same seats—realized that if our profession was to survive and succeed, we needed new standards to meet the demands of new times.

So we added ethics, education, and clinical practices. And now we stand at yet another critical crossroads where healthy profits too often supersede healthy patients. Where they're rewriting the rules of the game, and rewriting the way we practice medicine right along with it.

So it is time for us to change again, with an entire new set of standards on how physicians deliver health care in a marketplace that is undergoing profound and fundamental change.

Listen to what this means: If we do not assert our own expertise—if we do not assert ownership of our profession and our practices—then someone else will.

This is our top priority—because it is the profession's top priority. And it is your top priority.

Standards and ethics are the bedrock of our past. We must make sure they are the bedrock of our future.

Standards is only part of our vision. Advocacy is the other part. We will advance a new national advocacy with a one-two, public-private punch like you've never seen before.

In the public arena, our policy advocacy will be more aggressive, more finely focused, pursued with greater intensity. Always aimed at protecting the relationship between physician and patient. Always aimed at elevating the standing of the entire profession. That's punch number one.

Here's number two: In the private arena, we will open a new frontier of private sector advocacy. Here, too, fighting not just for the patient-physician relationship—but also fighting for excellence and quality of care.

The physicians of this country made quality the hallmark of American medicine. We will not allow the budget bureaucrats to take it away just to feed the bottom line.

My friends, we've worked together in this House for a long, long time.

And I can tell you this is not a flight of "feel good" rhetoric for the post-reform 90s. It's not hypothetical. It's real. And it's happening in real time, right now.

I'm talking about a shift in the AMA's total mind set that can carry us—patients and profession—through in good health far into the 21st century.

About re-creating an AMA that is focused. Selective. Leaner. Knowing who we are—and who we are not. An AMA that is impact-oriented. Information-driven. On the leading edge when it makes sense.

But above all—connected—to our members and the world around us.

A change so powerful it literally changes the face of this House—so we reflect the face of our profession in the years to come.

And let me tell you this: The Board is looking at every aspect of the AMA, from the EVP office down, to the housekeeper's office up.

If I sound excited—it's because I am excited. Your whole Board is excited.

Because this is a new beginning—a real turning point in our history. The AMA is creating tools of change on your behalf and for your patients. Actively creating our new world of tomorrow based on what we truly believe, and the work we truly do.

And I'll tell you something else.

We don't plan to just talk the talk. This Board is going to walk the walk. And today I'm the first one out the door.

Starting today, your Board is going to start selling this message.

Buttonhole us in the halls. Bring it up in the reference committees. Ask us what you need to know. Tell us what you want us to know.

➤ *Continued on Page 397*



Medical School Hotline

Student Profile of the Class of 1998 at the John A. Burns School of Medicine

Satoru Izutsu, PhD
Associate Dean and
Chair, Admissions Committee

The Class of 1998, 26 men and 30 women, began their four years of medical education in August 1994. This class is the sixth group to undertake the medical education curriculum in the format of problem-based learning.

From a total of 1,730 applicants, 86% declared the Mainland or the Pacific Islands as their residence. A total of 229 were granted interviews.

The average age is 24 years with a median of 23 years. The spectrum of ethnicity found in Hawaii is represented with 16 Japanese, 11 Caucasians, 7 Hawaiians, 5 Filipinos, 5 Chinese, 4 Other Asians, 3 Koreans, 1 Chamorro, 1 Malaysian, 1 Maori, 1 Mexican-American, and 1 Vietnamese.

Sixty applicants qualified for eight slots designated as *Kulia*. *Kulia* is an affirmative-action program for underrepresented

minorities, Hawaiians and Filipinos in Medicine, in Hawaii.

Twelve students had graduated from Punahou, 6 from Iolani, 4 from Mililani High School, 3 from Kamehameha, 2 each from Waiakea High School, JFK High School (Guam), Maui High School, and St Joseph's High School. There was one from each of the state's high schools, as well as 6 from Mainland high schools, one from a foreign country, and one with a Graduate Education Diploma.

Ninety-seven percent entered with Bachelor of Arts or Bachelor of Science degrees and eight hold Masters degrees. Of the colleges attended, more than one-fourth attended the University of Hawaii. Fifty-five percent attended public colleges and 45 percent came from private colleges. Sixteen majored in biology, 4 psychology, 3 engineering, 2 liberal studies, 2 chemistry, 2 physical therapy, and 2 zoology. Majors in Asian studies, public health, history, Japanese, pharmacy, speech, education and others made up the remainder. All have had experiences, either professionally or as volunteers, in the delivery of health care.

The Admissions Committee consists of 13 members who come from the school of medicine faculty, the community-at-large, and the undergraduate college. Members are appointed by the Dean and serve on staggered terms, two or three years. Seven of the members are women. The major ethnic groups in Hawaii are represented. The Committee meets September through May.

The documents presented to the Admissions Committee consist of the following for each applicants: Hawaii resident status; academic scores (Grade Point Averages and Scores from the Medical College Aptitude Test); interviews; essays that reply to the questions, "Why medicine?" and "Why the John A. Burns School of Medicine?"; letters of recommendation; and, a biographical sketch and transcripts from the American College Admission Service (AMCAS). The deadline for submission of all documents to AMCAS is December 1.

There are 61 interviewers from throughout the medical community, clinical and basic sciences. Interviewers attend training sessions at the beginning of each school year. Each applicant is responsible for scheduling the interviews.

Two demonstrations in Problem-based Learning are conducted annually by JABSOM. All applicants and interested students are urged to attend a session.

Each student is assigned a faculty adviser during the first orientation week. Students are closely monitored by the advisers throughout the four years and are encouraged to seek their assistance.

The members of the Class of 1998 are on their way to becoming physicians. They have been selected in the best way we know to ensure that the community will be served by men and women who will have had the benefits of a solid and respectable medical education.

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HMA Council Highlights

November 4, 1994
Roger T. Kimura MD, Secretary

The HMA Council meeting was called to order by Dr Frederick C. Holschuh, President at 5:35 pm.

Present were: Drs F. Holschuh, President; C. Lehman, President-elect; R. Kimura, Secretary, J. Spangler, Treasurer, A. Don, C. Kam, A. Kunimoto, H.K.W. Chinn, E. Bade, M. Joshi, R. Goodale, T. Smith, T. Au, P. Chinn, W. Dang Jr, P. DeMare, R. Hollison, S. Hundahl, K. Thorburn, J. Betwee, M. Shirasu, B. Shitamoto, P. Kim, C. Kadooka, A. Bairos, W. Dang, G. Goto, J. Lumeng, W. Chang, J. McDonnell, S. Wallach, C. Goto; L. Nishi representing the HMA Alliance.

Staff: J. Won, B. Kendro, N. Jones, J. Asato, L. Tong, P. Kawamoto, and A. Rogness, recording secretary.

• Dr Holschuh informed Council: 1) that Dr Andrew Don is the chair of the Governor's Advisory Committee on QUEST and reminded them that any requests or concerns regarding QUEST can be forwarded to Drs Don or Holschuh. 2) The American Medical Association interim meeting will be held in Hawaii on December 4 to 7, and physicians are encouraged to participate in the reference committee hearings.

• Mrs. Lillian Nishi reported that the Alliance's goals for 1995 are to increase the HMAA's membership, to be active in legislative issues, and to raise funds.

Council Actions

• Approved the Membership Benefits Committee's recommendation to add Hawaii Auto Mart as an HMA membership benefit.

• Passed that HMA survey its members concerning the MedQUEST program. The Executive Committee and staff will design the survey.

• Approved the Membership Benefits Committee's recommendation to take *no* further action on Resolution No 2, which proposed a new seat on the HMA Council for a representative from any association of multispecialty physicians having more than 100 members and to modify the bylaws to allow this action.

• Passed two motions about Nurse Prescriptive Authority: 1) That in the best interest of the patients supervision must be present or the formularies must be very limited. 2) That the HMA President write a letter to the Board of Medical Examiners or the Formulary Advisory Committee stating the need for supervision in the strongest language possible. It also will be suggested that minutes be taken at the formulary advisory meetings.

Component Society Reports

Honolulu.—Dr K. Thorburn reported that the HCMS inauguration of new officers will be held on November 18. Dr Danelo Canete will be the incoming President.

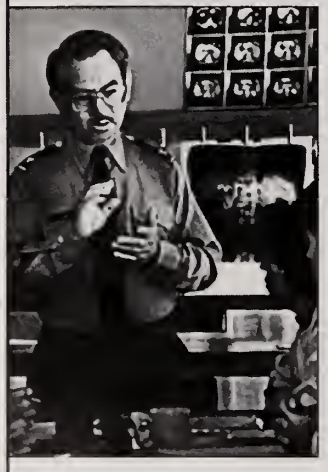
Hawaii.—Dr E. Bade reported that Hawaii County will be holding a meeting on November 17, and they will elect new officers.

Kauai.—Dr R. Goodale reported that Kauai County will meet in early December to elect new officers.

Maui.—Dr M. Joshi reported that Maui County had a meeting on November 3. He plans to host weekly discussions at his home regarding medical issues and to get more physician input.

West Hawaii.—Dr T. Smith reported that they will have a meeting on November 22 for the

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election of new officers and to discuss Medicare forms and regulations.

For Information

CME.—Dr DeMare reported that in September he had attended an ACCME meeting in Chicago. The ACCME (the governing body for CME in Hawaii and in other states) will make some changes. It will become a bigger organization and will retain more staff; there will be more rules and regulations for CME approval.

Nominations to AMA Council.—The HMA Executive Committee renominated Dr Stephen Wallach to the AMA Council on Legislation.

Inappropriate Use of DEA Number Resolution No 5: Dr H.K.W. Chinn reported that Resolution No 5 is already AMA policy. Council referred the resolution to the Legislative Committee as it needs to be introduced as legislation.

1994 Annual Meeting.—Dr M. Shirasu reported that the exhibitors were pleased with the format of the meeting, and it was an all-around success.

Long-term Care.—Dr P. Blanchette reported that she had attended a meeting on long-term care and future funding.

Project HOPE, a proposed State tax to fund long-term care services in Hawaii, was presented. This concept was not well received. The Japanese Chamber's Long-term Care Committee is working on an alternative proposal for financing long-term care; prior to any legislation, careful analysis of the implications of various financing options must be completed.

Harm Reduction Resolution No. 1.—Resolution No 1 was referred from the House of Delegates to the HMA Executive Committee, who referred the resolution to the Alcohol and Other Substance Abuse Committee. The committee is not scheduled to meet prior to the AMA House of Delegates in December, and it was recommended by AMA Delegate Calvin Kam MD that the Council approve a substitute resolution. This resolution would ask the AMA to study the issue of harm reduction and report its findings to the state medical societies. The substitute resolution has been submitted to the AMA.

HMSA Letter.—HMSA's annual letter regarding its fee increases has raised some concern. 1) One physician said that HMSA has unilaterally decided to change the contract; 2) In order to get their fees allowed by January 1, physicians would have to submit them before November 1 (HMSA requires a 60-day leeway). The HMSA letter has been referred to the HMA/HMSA Committee for review and a report to Council.

The meeting was adjourned by Dr Holschuh at 8:30 pm.

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Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

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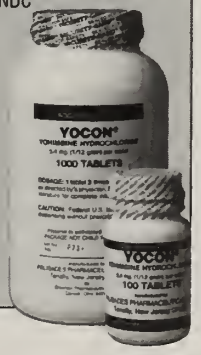
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



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Transjugular Intrahepatic Portosystemic Shunt (TIPS): Treatment of Esophageal Variceal Bleeding

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Management of esophageal variceal bleeding continues to be a difficult problem for the practicing physician. TIPS is an interventional radiologic procedure that involves creating a channel within the liver between the portal vein and the systemic circulation using an expandable metallic stent. Ten patients underwent TIPS at St Francis Medical Center and the technical success rate was 100%. Complications have been minimal. One patient has died from progressive hepatic failure and carcinoma, and 1 patient underwent liver transplantation. The remaining 8 patients have a patent TIPS in place and have not rebled.

Introduction

Ideal management of acute variceal bleeding in the 1990s requires a closely coordinated effort between the primary care physician, gastroenterologist/hepatologist, surgeon, and interventional radiologist. All patients with suspected acute variceal bleeding should be managed in the intensive care unit with adequately trained nursing personnel. The latter play a critical but often unappreciated role in the minute-to-minute patient management. The goals of this team effort are to achieve hemodynamic stability, to prevent and treat complications, and to control bleeding. All 3 goals must be addressed simultaneously and within hours of the patient's admission.

Major causes of early mortality from these bleeding episodes include aspiration pneumonia, renal failure (from hypovolemia), encephalopathy, sepsis and multi-organ system failure. These complications can be managed by aggressive fluid resuscitation, correction of coagulation defects, lactulose, gut bacterial decontamination with broad-spectrum, non-absorbable antibiotics, and nutritional support.

There have been many modalities used to control bleeding, such as vasopressin/somatostatin infusion, balloon tamponade, endoscopic sclerotherapy (EST), endoscopic band ligation, surgical portosystemic shunts, and esophageal transection. In recent years, EST has emerged as the treatment of choice to achieve hemostasis acutely and prophylactically. Notwithstanding all efforts, end-stage liver disease still has a dismal 5-year survival rate. The natural history of variceal bleeding is such that 50% to 60% of all bleeding will stop no matter what therapy is used.[1] About 20% to 30% of variceal hemorrhages will be massive and may result in death.[1-3] Furthermore, less than 40% of these patients will be alive one year after their first variceal bleed.[1,4] The ultimate treatment, and the only one that also will eliminate the underlying liver disease, is liver transplantation; the scarcity of donors, however, limits its widespread use.

We now add TIPS to our list of treatment alternatives. TIPS is an interventional radiologic procedure that creates an artificial shunt through the liver parenchyma from the portal vein to the systemic circulation with the use of an expandable metal stent.[5] It is essentially a side-to-side portocaval shunt without the morbidity and mortality of a surgical procedure.

Methods and Materials

This study is a retrospective review of the early cases of transjugular intrahepatic portosystemic shunts performed at St Francis Medical Center. Patients were referred from throughout Hawaii and Guam for assistance in management of esophageal variceal bleeding.

All patients underwent extensive evaluation with laboratory data to include assessment of renal function, liver function, coagulation parameters, and ammonia level. Esophagogastroduodenoscopy had been performed on all patients either at St Francis or by referring gastroenterologists to confirm the presence of esophagogastric varices. All patients underwent abdominal ultrasound with Doppler to assess patency of the hepatic and portal venous systems and the status of the liver.

Prior to TIPS, all patients received intravenous hydration and prophylactic antibiotics with cefoxitin. TIPS was performed in the special procedures room of the radiology department, and an anesthesiologist was present to monitor the patient and provide intravenous sedation.

The technique as described by Dr Ernest Ring at the University of California at San Francisco was used.[6] A jugular vein puncture was performed and a catheter and guide wire were advanced through the superior vena cava. An initial pre-TIPS inferior vena cava pressure was obtained. The right or middle hepatic vein was then catheterized, and a 16-gauge Colapinto needle was passed from the hepatic vein into the right or left portal vein. A guide wire and catheter then were advanced into the main portal vein, a pre-TIPS portal vein pressure was obtained, and the pre-TIPS portal vein-IVC gradient was calculated. A portal venogram was performed to confirm correct placement and to assess anatomy and visualize esophageal varices. The parenchymal tract between the hepatic and portal veins was dilated with an angioplasty balloon. A metallic stent then was placed in the tract, a post-TIPS

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portal vein-IVC gradient was obtained and a portal venogram was repeated to assess the shunt. Esophageal varices were embolized with stainless steel coils if significant flow in the varices persisted after stent placement.

Patients were observed post-TIPS for procedural complications, evidence of encephalopathy, progressive liver failure, or recurrence of bleeding. Following TIPS, abdominal ultrasound with Doppler was performed every 3 months for the first year to assess velocity across the TIPS and direction of flow within the portal vein.

Results

Ten patients underwent transjugular intrahepatic portosystemic shunt at St Francis Medical Center during the 11-month period between March 15, 1993 to February 15, 1994. Of these 3 women and 7 men, the mean age was 48.4 years (range 38 to 73 years). The etiology of liver failure included alcoholic cirrhosis in 6 patients, and 1 patient for each of the following: Cryptogenic cirrhosis, hepatitis C, hepatitis B/hepatoma, and hepatitis C/ alcoholic cirrhosis. All 10 patients had esophageal variceal bleeding, and 1 patient also had severe ascites which was refractory to medical management. These patients had 2 to 4 episodes of variceal bleeding, and 6 patients had multiple sclerotherapy sessions. Six patients were actively bleeding within 1 week prior to TIPS, and 1 patient was bleeding in the 24 hours prior to the procedure.

TIPS was performed by a single interventional radiologist (LL) and the technical success rate was 100%.There was technical difficulty in 1 patient who required 2 sessions to complete the TIPS. In this particular case, the portal vein could not be located; a portal venogram via a superior mesenteric artery injection was performed to identify the course of the portal vein, and the TIPS was then successfully performed. The mean portal vein-inferior vena cava gradient was 21.9 mm Hg pre-TIPS and 10.3 mm Hg post-TIPS. All procedures were accomplished under local anesthesia with intravenous sedation. The mean procedure length was 2.7 hours (range 1.3 to 4.0 hours).

All patients remained in the intensive care unit or the post-anesthesia recovery room for a 24-hour period following TIPS. The mean hospital stay following TIPS was 4 days (3 to 5 days). The only procedural complication was a pneumothorax, which was successfully managed with tube thoracostomy.

Patients have been followed for 12 months post-TIPS. One patient died as a result of progressive liver failure and hepatocellular carcinoma 2 months following TIPS. One patient underwent a successful liver transplant 228 days following TIPS. The shunt was noted to be patent in his explanted liver. Of the 8 remaining cases, 1 patient developed a stenosis of the draining hepatic vein at 2 months. This was manifested by recurrent ascites and hydrothorax which had been initially controlled with the TIPS. The stenosis was successfully restented, and this patient currently is doing well. In this series of patients, the primary shunt patency rate is 90% and the secondary patency rate is 100%. One patient demonstrated clinical evidence of encephalopathy, which was controlled with lactulose. This patient had mild encephalopathy prior to TIPS. The mean ammonia pre-TIPS was 39.7 µmol/L and in the peri-procedure period this increased to a mean of 81.4 µmol/L. Three patients are currently on lactulose for an elevated ammonia, but none of these patients has clinical symptoms of encephalopathy. One patient had a significant rise in AST from 37 IU/L to 1104 IU/L (this patient suffered no consequences and his AST has since returned to normal), otherwise there was no significant change in bilirubin, AST, protime, or alkaline phosphatase in any of the remaining patients during the immediate post-procedure period. No patient has had recurrence of variceal hemorrhage.

Discussion

The first human intrahepatic portosystemic shunts were done in the early 1980s by Colapinto et al, who created a tract in the liver using a balloon catheter. These channels generally occluded within 30 days because of the elasticity of the liver parenchyma.[7] The first successful TIPS in a human was performed in Germany in 1988 by Richter et al using an expandable metallic stent devised by Palmaz.[8] Since this first shunt, the procedure has been widely accepted in both the academic and community settings.

There is a growing body of data now available in the literature reporting efficacy and short-term follow-up.[6,9-14] The largest published series are by LaBerge et al[6] and Roessle et al,[11] both with 100 patients. Although randomized, double-blind studies comparing TIPS with other forms of therapy are not available, some reproducible results have been reported and preliminary conclusions can be drawn.

TIPS has been performed on patients with cirrhosis of all etiologies, the most common being Laennec's cirrhosis. Patients of all Child's classes have been included. Liver function tests are usually abnormal. Patients aged 5 years to 84 years have been treated, with men treated more frequently than women.[6,9-14]

The most common indication has been recurrent bleeding esophageal varices, refractory to endoscopic sclerotherapy. Additional indications include acute variceal bleeding not responsive to sclerotherapy or due to gastric or ectopic varices, and ascites refractory to medical therapy.[6,9-11,13-15]

Early studies reported technical success rates of 75%,[16-17] but more recently, because of the refinement of the technique, this has improved to 90% to 100%.[6,10-11,14-15,18-20]

TIPS has been shown to be effective in controlling variceal bleeding in 86% to 100% of cases and in decreasing ascites in 70% to 100% of cases.[6,9-15] After creation of the shunt, portal blood flow has been shown by Doppler sonography to increase by 250%.[11] A reduction of the portal-systemic gradient by 50% to 75% usually is achieved [9,11,15] Portal venography performed during the procedure usually shows immediate decompression of esophageal varices.[6] Endoscopy performed within a month of the procedure has confirmed resolution of the varices in almost all cases.[21]

Improvement of the ascites occurs rapidly over the days following the procedure; increased renal blood flow results in increased urine volume, improved creatinine clearance, and natriuresis.[22] These findings also explain improved renal function in some TIPS patients with renal insufficiency.[23]

The incidence of complications directly related to the procedure is less than 5%; these include complications of placing a central venous catheter (pneumothorax, hemothorax, neck hematoma), fever, stent migration, bleeding (hemoperitoneum, liver hematoma, hemobilia), hepatic artery injury, bile duct injury, renal failure, and respiratory failure.[6,11,24]

Long-term complications seen with portacaval shunts also can be seen with TIPS, since TIPS is essentially a side-to-side portacaval shunt without an incision. Progressive liver failure can occur because blood flow is diverted from the hepatocytes.

LaBerge et al[6] had a 9% mortality from progressive liver failure because a large number of their patients had severe (Child's C) cirrhosis. On the other hand, Roessle et al, who had fewer Child's C patients, had no deaths from progressive liver failure.[11] Both authors describe asymptomatic transient elevations in liver functions in some of their patients.

Progressive liver failure also can be manifested as new onset or worsening of hepatic encephalopathy. This has been a major problem with surgical portacaval shunts.[25] The incidence in TIPS patients appears to be 15% to 30%. The encephalopathy is usually not severe and is usually well-controlled with lactulose.[5,6,20,26-29]

Long-term shunt patency poses a major question. The best available data is 3 year follow-up by LaBerge et al (80% primary patency and 100% secondary patency) and Roessle et al (67% primary patency and 100% secondary patency).[11,30] Other investigators with shorter follow-up of 12 to 18 months have reported primary patency of 17% to 82% and secondary patency of 83% to 97%.[12-13] Thus, the best estimate at this time, based on the above data, is that up to 33% of these shunts will fail in 3 years.

These authors also have shown, however, that failed shunts due to stenosis or occlusion usually can be reopened through a transjugular approach, resulting in secondary patency rates approaching 100%. In order to detect shunt stenosis before shunt failure and rebleeding occurs, Doppler sonography now is being used.[32-33] A strategy of close surveillance and early reintervention may be the answer to long-term patency.

Current research is also focusing on the biochemical and cellular processes that control the response of blood elements and the vessel wall to the metallic stent. Stents coated with heparin and other materials are being studied in experimental models.[34]

The results of TIPS in the first patients at our center have been encouraging and are comparable to those reported in the literature. So far, we have achieved 100% technical success and have had no recurrent bleeding. One shunt stenosis, manifested by recurrent ascites, was successfully restented and complications have been few. Long-term patency rates and changes in hepatic synthetic function will need to be observed closely. Like other centers, a number of our patients will undergo liver transplantation. In these patients, TIPS will have served as a valuable bridge to transplantation, preventing life-threatening variceal hemorrhage before an appropriate donor organ becomes available.

Summary

The management of bleeding esophageal varices continues to be one of the greatest challenges for the practicing physician. Recent advances in endoscopic techniques, pharmacologic intervention, surgical decompression procedures and liver transplantation have resulted in a more hopeful outlook for patients with this problem. TIPS has now been added to the list of possible therapies. Despite impressive short-term results, more data, including controlled clinical trials comparing TIPS with standard treatment options, are needed to determine relative long-term patency, efficacy, and overall survival. Notwithstanding, TIPS has become widely used in the treatment of bleeding esophageal varices because of its relative noninvasiveness, safety, and excellent short-term results. Its future, although uncertain, is promising.

Acknowledgements

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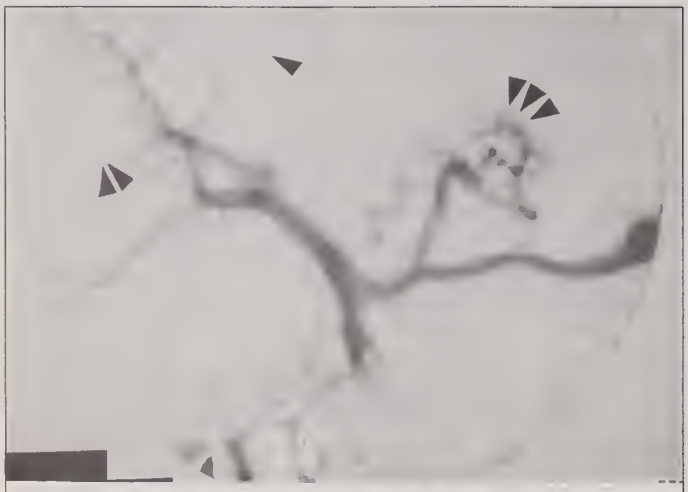


Fig 1.—Contrast radiograph showing TIPS catheter (single arrowhead) running from hepatic to portal vein, a percutaneous catheter (double arrowhead) within the portal vein, and esophageal varices (triple arrowheads).

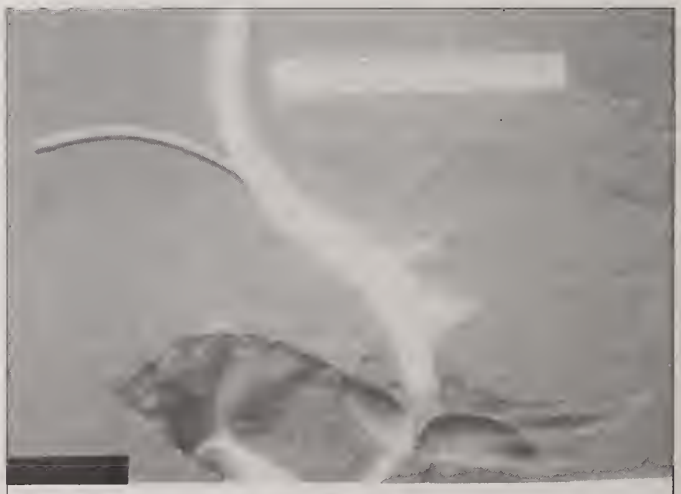


Fig 2.—Radiograph showing contrast flowing through newly created shunt running from portal to hepatic vein.

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Fig 3.—Stent used in TIPS, closed position.

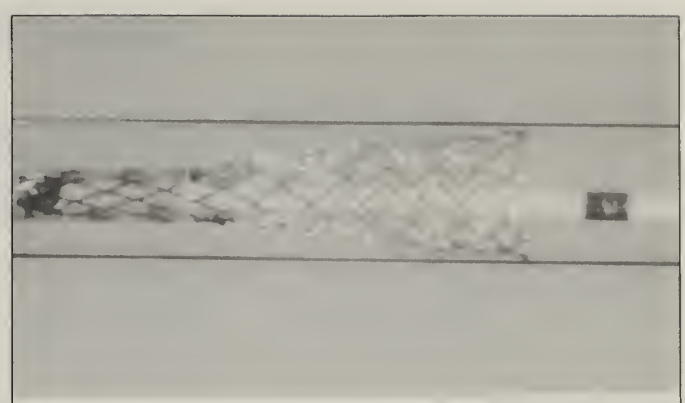


Fig 4.—Same stent expanded as it is used.

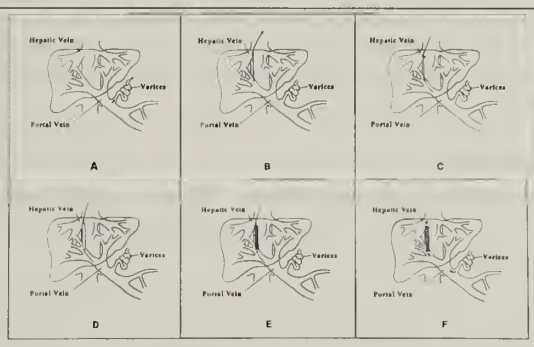


Fig 5.—TIPS. Entering hepatic vein, catheterize the portal vein by traveling through liver parenchyma (B). Guidewire is shown in C; subsequent dilation of tract with balloon (D). Stent is placed and further dilated if necessary (E). After removing catheters, a newly created portal systemic shunt (F).



Fig 6.—Oblique cut through excised liver from patient 2 (liver transplantation) showing patent shunt running through liver parenchyma. (Courtesy Department of Pathology, St Francis Medical Center.)



Fig 7.—Close-up view of Fig 6 displaying the stent within the shunt created via TIPS procedure. (Courtesy Department of Pathology, St Francis Medical Center.)

Organizational Response to Adolescent HIV Risk

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Using semi-structured interviews, the present study examined organizational responses to adolescent HIV risk in an urban Honolulu community. All 23 health, social service, and educational organizations studied have been impacted by HIV. However, the overall organizational response has been compartmentalized and limited. Recommendations concerning improved organizational responses are provided.

Introduction

The response of public and private health, educational, and social service organizations toward adolescent HIV infection and its prevention has been slow for several reasons.

First, the small number of actual AIDS cases among teenagers (less than 1% of the total AIDS population nationwide as well as in Hawaii) has obscured the true infection rate and thus diminished a sense of urgency. However, with an average latency period of 10 years from infection to illness manifestation, AIDS data on adolescents can be collected only from adults in their 20s. This group constitutes a rapidly rising 19% of the total AIDS population and about 16% of its members are women.[1]

Second, the Centers for Disease Control has collected separate data on adolescent AIDS only for the last 5 years. Teens are the least researched group within the HIV population, and information on the course of illness, response to medication, and service utilization is much less well known than for the adult or pediatric age groups.

Third, affected teens are the age group most difficult to reach. Disenfranchised, ethnic minority, and gay youths are overrepresented in the HIV-infection spectrum, but health services are even less available to *marginalized* than to mainstream youths. Constraints on agencies related to consent and confidentiality policies and confusion as to whether confidentiality policies for sexually transmitted diseases (STDs) apply to HIV further complicate service delivery.

Fourth, unrelenting controversy about the content and methods of AIDS education has hampered the development of effective prevention strategies directed toward young people.

Finally, evidence suggests that physician-adolescent contacts are too short or infrequent and lack routine sexuality and drug-use history-taking and counseling to allow for a meaningful role in adolescents' lives related to HIV prevention.[2-4] Furthermore, a 1991 sample survey of Oahu tenth graders found that half reported having no personal physician.[5]

Only scant information is available in the U.S. and in Hawaii on the scope and quality of HIV services developed by new or existing community organizations in regard to adolescent AIDS. The extent to which HIV programs reach and influence youths is unclear.

As part of a larger NIMH-funded study on social networks of young ethnic-minority adolescents (ages 12 to 15) living in high-risk settings in Puerto Rico, Atlanta, Seattle, and Honolulu, the Hawaii research team conducted an exploratory survey of the organization of HIV services provided to Kalihi-Palama youths. The type and quality of responses to HIV by health and other community service organizations and their inter-organizational environment were assessed. We focused on 12 to 15 year-olds because this group has been studied the least and yet represents the age at which the incidence of unprotected sexual behavior and substance abuse remains fairly low, while by ages 16 to 18 most of these youths will be engaging in high-risk behavior, and interventions may be too late.

Methods

Through an open-ended interview and a review of organizational documents, one or more key informants from 23 agencies provided information about their general mission, goals, and services; provision of HIV-specific services; the institution's formal and informal conceptualization of HIV infection risk for 12 to 15 year-old youths; and the staff's perception of the effectiveness of their programs. All agencies resided in or served youths for a specific urban Honolulu neighborhood, Kalihi-Palama.

Organizations were selected by using a mix of an a priori fixed list and snowballing approach, where interviewees could suggest other organizations for additional interviews. Agencies included health clinics, social service agencies with youth programs, agencies with services for specific ethnic groups, HIV-specific agencies, and private and public schools.

All interviews were conducted between January 1992 and December 1993. Oral and written materials were reviewed and summarized. Data analysis included qualitative and quantitative approaches. The qualitative analysis focused on organizational responses to HIV, organizational perceptions of HIV risk in the target population, and organizational perceptions of effectiveness of HIV services.

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The quantitative analysis identified organizational characteristics of overall responsiveness to HIV services to young teens. Here, 2 judges read the interview materials and independently rated each agency along a number of dimensions. The major dependent variable consisted of a 6-point scale describing the agency's overall response to HIV services for young teenagers, ranging from no response (1) to direct, proactive, and effective response (6).

Results

Data from 23 agencies were available for analysis: 5 agencies primarily engaged in health care delivery, 14 social service agencies, 3 HIV-related school education programs, and 1 agency providing primarily HIV education and HIV-specific support services. Except for the latter, all agencies had been established prior to the AIDS epidemic. All had added or incorporated some form of HIV services into existing programs without changing or adjusting their general program mission or overall goals, except when funding demanded some specific HIV intervention. For example, an ethnically focused service agency provided HIV brochures in native languages to immigrants. Staff training in HIV issues was provided generally through sporadic in-service lectures, but rarely was extra staff hired to organize or coordinate HIV-related programs. Instead, staff was diverted from other ongoing programs. The intensity of agency involvement, in the absence of written curricula or program guidelines, largely depended on the designated staff members' own initiative.

The dilution of personnel resources without clearly defined goals often led to conflicting priorities within agencies and contributed to a lack of staff confidence in their own expertise. Furthermore, in the absence of clear policy statements and guidelines in many organizations, everyday staff provided HIV education and service at their personal discretion.

Many staff members from social service agencies voiced discomfort in discussing sexual issues with teens. For many, sex and HIV education were considered "health issues" that could be handled better elsewhere—for example, in schools where teaching HIV-related subjects is mandatory, or in health care settings. Sometimes, cultural sensitivities and embarrassment played a role in avoiding sexual topics considered deeply private, particularly among Asian/Pacific Islanders.

With the exception of public school programs and one health agency, all organizations were privately funded or volunteer based. The majority had public fund support for other components of their programs. We found that the type of funding had little influence on the creation of HIV-related services unless a specific mandate was given. This was a rare occurrence.

All agencies recognized a need for HIV prevention services. Community youths were perceived to be at risk for infection primarily through sexual behavior; injection drug use was uniformly considered rare and not of great significance. Compared with other compelling social, educational, and psychological needs, however, HIV risk *in itself* was not seen as a high priority, but "just one of many problems."

Table 1.—HIV Responsiveness Scores as a Function of Agency Type

Agency Type	n	Mean	Standard Deviation
Health	5	4.20_b	.45
Social Services	14	2.25_a	1.25
School	3	3.83_{ab}	.76

Note.—Means with different subscripts are significantly different, $p < .05$ with Bonferroni correction. Higher scores indicate greater responsiveness.

Overall responsiveness of programs to the HIV challenge was independently assessed by 2 raters. Interrater reliability was .78. When scores disagreed, the arithmetic mean between the 2 ratings was taken. These average responsiveness ratings were then subjected to a one-way analysis of variance comparing health, social service, and education agencies (scores from the one HIV organization were eliminated for this analysis). A significant overall effect, $F(2,19) = 7.22$, $p < .01$, and subsequent least significant difference tests (with Bonferroni correction) indicated that the community health clinics were rated higher than the social service agencies in the vigor of their response to HIV (Table 1). However, these health clinics functioned primarily in a tertiary prevention mode with limited outreach efforts. Aside from providing medical services, many health clinics offered information, protective devices (eg, condoms), and HIV testing and counseling to their adolescent patients on request. The total number of teens reached was low, both because of the individualized nature of the service and the fact that few teens, especially 12 to 15 year olds, use health services or initiate requests for HIV information or services on their own.

HIV-related programs by youth social service agencies or schools often were restricted to providing basic HIV/AIDS information by handing out brochures, giving sporadic talks, or answering specific questions when teens asked—a rather infrequent event. While protection through condoms was usually discussed, only a few agencies made them available to sexually active teens. HIV prevention programs specifically directed toward young teens were not available except in school educational programs, and services for gay youths were nonexistent.[6]

No agency in the survey had a formal protocol for evaluating the effectiveness of its HIV-related interventions. Informal assessments were restricted to subjective impressions by staff with a general consensus that improved knowledge about HIV seemed unlikely to change teen behavior. The adolescents' own perceptions about the usefulness of HIV-related services was unknown. Generally, well-established interagency relationships did not seem to extend to HIV services.

Discussion

The results of this survey indicated a poorly integrated, fragmented, and insufficient response to HIV by community organizations designated to service youths in this urban community. Most interventions consisted of attempts at education through occasional lectures or handouts of printed brochures. Social skills training to negotiate safer sex practices or teaching the use of and providing access to protective devices (condoms) was rare. With the exception of the school programs, the number of adolescents reached was small, and they were usually served for reasons other than HIV prevention.

While research on organizational responses to the AIDS epidemic has been scarce, it describes a limited, inconsistent reaction by the majority of agencies throughout the U.S.[7-8] Our data reflect a similar picture in our target community. At the time of our study, agencies that attempted to incorporate HIV ser-

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Bone Mineral Content in Hawaiian, Asian, and Filipino Children

Marcella K. Nowack MS,* Shawna Brizzolara MD,*
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Os calcis bone mineral content (BMC) was measured by single photon absorptiometry in 86 children, ages 6 to 13 years from Hawaiian, Oriental, Caucasian, and Filipino ethnic groups. Pearson correlations indicated significant positive correlations between BMC and age, height, and weight. However, there were no significant differences in age, height or weight between ethnic groups. ANOVA revealed a significant effect of ethnic group on BMC with the Hawaiian group having a significantly higher BMC than the Asian or Caucasian groups. When age, height and weight were controlled for, ANCOVA still showed a significant effect of ethnicity on BMC. The current findings suggest that ethnic differences can develop early in life.

Introduction

Adolescence is a crucial time for the development of bone mass. Rapid increases in skeletal mineral are necessary to support increased body weight, muscle mass, and muscle strength. Previous studies of adults have identified many factors that influence bone mineral status including ethnic group, sex, exercise, and nutrition. Current data now indicates that similar factors also affect the skeletal development of children. Li et al found black children 1 to 6 years of age had a higher mean bone mineral content (BMC) than white children.[1] In another study, Bell and co-workers found that bone mineral density was greater in black than in white children between the ages of 7 and 12 years.[2] Contrary to these findings, a study by Gilsanz et al reported that vertebral bone density did not differ between black girls and white girls before puberty.[3] Most studies have compared bone mass in white and black subjects but have neglected to assess peoples of the Pacific. Hawaii encompasses many different ethnic groups including Hawaiians, Asians, Caucasians, and Filipinos. We studied the os calcis bone mineral content in children from these ethnic groups to determine whether the inter-ethnic differences found in other populations also occur between these groups.

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Materials and Methods

A group of 44 boys and 42 girls between the ages of 6 and 13 years was studied. The subjects were recruited at a children's fitness fair sponsored by the University of Hawaii John A. Burns School of Medicine and consisted of Hawaiian, Asian, Filipino, and Caucasian ethnic groups. Height and weight of each subject was measured at the time of the bone test. Each subject completed a questionnaire regarding basic physical characteristics, medication and vitamin use, exercise and calcium intake. Because of the vast array of mixed ethnic groups in Hawaii, the parents of each subject were asked to categorize their child into one of 4 ethnic groups based on their genetic dominance. The Hawaiian group included subjects of Polynesian descent, and the Asian group included Japanese, Chinese, and Korean subjects. BMC of the dominant os calcis was measured by single-photon absorptiometry with a Siemens OsteoAnalyzer Model Number SPSHA110.[4] All measurements were made by the same technician. The OsteoAnalyzer was standardized with a known phantom before the testing was performed. Because the data were obtained in a public health fair, it was not appropriate to ask the girls about the onset of menarche.

The data were analyzed using the SPSS statistical package. The procedures used were primarily analysis of variance (ANOVA) and analysis of co-variance (ANCOVA), Pearson correlation and partial correlation. All tests of significance reported employed two-tailed p values.

Table 1.—Age and Physical Characteristics of Subjects

Group	Age	Height (in)	Weight (lb)
Hawaiian (26)	9.5 ± 1.8	55 ± 5.1	80 ± 30
Asian (42)	9.1 ± 2.0	53 ± 5.0	72 ± 29
Caucasian (11)	8.5 ± 1.6	54 ± 3.8	71 ± 17
Filipino (6)	8.7 ± 1.2	54 ± 3.5	68 ± 19

Note. Analysis of variance showed no significant differences in age, height, or weight between ethnic groups ($F < 1.8$ and $p > .150$ for all).

Group	Age	Height (in)	Weight (lb)
Boys (44)	9.2 ± 2.0	54 ± 5.0	78 ± 33
Girls (42)	9.0 ± 1.7	53 ± 4.7	70 ± 21

Note. Analysis of variance showed no significant differences in age, height, or weight between the boys and girls groups ($F < 1.9$ and $p > .176$ for all).

*Values represent the means and standard deviations of the mean.

Results

Age and mean physical characteristics of the subjects are listed in Table 1. All tables contain the mean and standard deviation of the mean. Age, height, and weight did not differ by ethnic group ($p = 0.5$, 0.14, and 0.6, respectively) or by sex ($p = 0.6$, 0.9, and 0.2, respectively). Pearson correlations on all the children indicated significant positive correlations between bone mineral content (BMC) and age ($r = .53$), height ($r = .70$), and weight ($r = .69$) $p < .001$ for all (Table 4). BMC and calcium intake were not significantly correlated. Results of mean BMC measurements for each ethnic group are given in Table 2. Analysis of variance indicated a significant effect of ethnic group on BMC ($F = 3.76$, $p = .014$). Duncan multiple range test showed that the BMC of the Hawaiian group was significantly higher than that of the Asian and Caucasian groups. Results of the effect of ethnicity and age on BMC is shown in Table 3. Analysis of co-variance in all children showed that when age, height, and weight were controlled for independently, there was still a significant effect of ethnic group on BMC ($p < .045$ for each case).

Discussion

The results of this study suggest that BMC at the os calcis is higher in Hawaiian children than in Asian, Caucasian, and possibly Filipino children. (Because of a low representation of Filipino subjects in this study, the data pertaining to this ethnic group are weak.) The magnitude of the BMC difference found between these ethnic groups is similar to comparisons of black and white children.[5-8] Bell et al studied black and white children between the ages of 7 and 12 years and their data suggested the bone mineral density of the midradius, spine, and hip were greater in black than in white children. They also found body weight and age to be important determinants of bone mass and some influence of sex differences at this age.[5] Our study indicates similar findings with significant positive correlations between BMC and age, height, and weight. However, these variables did not differ by ethnic group (Table 1), and we still found a significant effect of ethnicity on BMC (Table 2). Using analysis of co-variance and controlling for weight and age, ethnic group still has a significant effect on BMC ($F = 4.50$ and 3.71 respectively, $p < .015$ for both), indicating that the difference in BMC between ethnic groups is not caused by weight or age. When height is controlled for, there is a decrease in the F value to 2.81 ($p = .045$), suggesting that part of the effect of ethnicity is due to height; however, there is still a significant part of the effect of ethnicity on BMC that is unexplained by any other variable. Our current findings suggest an ethnic difference in BMC independent of body weight, height, or age. As shown in Table 2, when the boys and the girls from each ethnic group were analyzed separately, ethnic group was marginally significant among the girls ($F = 2.73$, $p = .057$) and nonsignificant for the boys ($F = 1.75$, $p = .172$). We have no clear explanation for why there was an ethnic difference in the girls and not the boys. One suggestion may be that boys tend to be more active and

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Table 2.—Os Calcis Mean Bone Mineral Content Levels (mg/cm2)

	Boys	Girls	Total
Hawaiian	318 ± 58 (14)	345 ± 82 (12)	330 ± 70 (26)
Asian	283 ± 54 (22)	278 ± 60 (20)	281 ± 56 (42)
Caucasian	283 ± 42 (6)	286 ± 70 (6)	284 ± 55 (12)
Filipino	360 (1)	275 ± 41 (5)	289 ± 50 (6)
Total	297 ± 56 (44)	296 ± 70 (42)	296 ± 63 (86)

Analysis of variance showed a significant difference in BMC between ethnic groups ($F = 3.80$, $p = .014$) with the Hawaiian group having a significantly higher BMC than the Asian and Caucasian groups. When only the girls were analyzed, ANOVA was still significant ($F = 2.73$, $p = .057$) with the Hawaiian girls being higher than the Asian; however, no significant differences were found in BMC between ethnic groups of boys ($F = 1.75$, $p = .172$). Analysis of variance showed no gender difference in BMC with these subjects ($p = .96$).
Values represent the means and standard deviations of the mean.

Table 3.—Effects of Ethnicity and Age on Bone Mineral Content in Normal Children

	BMC (mg/cm2) at Age			
	6 to 7	8 to 9	10 to 11	12 to 13
Hawaiian	275 ± 38 (4)	317 ± 31 (9)	336 ± 83 (9)	425 ± 66 (3)
Asian	251 ± 42 (8)	267 ± 45 (17)	300 ± 64 (8)	319 ± 63 (8)
Caucasian	238 ± 39 (2)	256 ± 38 (5)	331 ± 43 (5)	
Filipino	317 (1)	252 ± 35 (3)	332 ± 41 (2)	
Total	260 ± 41 (15)	277 ± 45 (34)	323 ± 65 (24)	347 ± 78 (11)

Analysis of variance showed significant ethnic differences in BMC in the 8 to 9 year olds and 12 to 13 year old age groups ($F = 4.22$ and 6.06, respectively, $p < .03$ for both) with the Hawaiian group having a higher BMC level. As expected, analysis of variance also showed a significant difference in BMC between age groups ($F = 8.23$, $p < .001$).

Values represent the means and standard deviations of the mean.

Table 4.—Ethnic Group Bone Mineral Content by Age, Height, and Weight

Bone Mineral Content	Weight	Height	Age
Whole Population	.692 83 p = .000	.701 84 p = .000	.534 84 p = .000
Hawaiian	.762 25 p = .000	.711 25 p = .000	.526 25 p = .003
Asian	.633 41 p = .000	.641 41 p = .000	.521 41 p = .000
Caucasian	.816 12 p = .001	.726 12 p = .006	.613 12 p = .023
Filipino	.840 6 p = .018	.824 6 p = .022	.460 6 p = .180

Medicaid Recipients and Psychiatric Treatment

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This is the third article published in HMJ with the same title. The first was published in June 1989[1] and the second in June 1992.[2] Both outpatients and inpatients on all islands were discussed in the previous 2 articles; this article will discuss only inpatients on the island of Oahu. The inpatient data in the previous articles covered all psychiatric admissions to hospitals on all islands; this article will cover only Medicaid recipients admitted to psychiatric wards in Oahu hospitals. The data from 2,500 inpatients were analyzed in each of the previous articles; this will analyze the data from 1,060 inpatients. The data were collected over an 18-month period from September 1992 to February 1994.

Patients and Methods

Patients

Unlike the previous reports, the data on inpatients are confined to Medicaid recipients who were admitted to the psychiatric inpatient units at The Queen's and Castle Medical Centers on Oahu.

Methods

In the previous reports, the data on inpatients were obtained from Medicaid Form 1144, which hospitals are required to submit for all Medicaid psychiatric admissions. In this report, the medical records, as well as other reports of patients admitted to the psychiatric units at Queen's and Castle, were reviewed to determine if they were Medicaid recipients at the time of admission.

Results

Although the data in all the reports were collected over 18 months, the number of admissions was fewer in this report because only Medicaid recipients were counted. The number of admissions to Castle was greater than Queen's (554 versus 506). This may not be an accurate reflection of the numbers of Medicaid patients admitted to the two facilities, because some of the admissions to Queen's were Medicaid recipients who were not identified as such at the time of admission. It is estimated that if an accurate recount of Medicaid admissions at Queen's were made, the number of patients admitted to both facilities would be nearly equal.

The distribution of patients by diagnosis and sex is nearly the same in all 3 reports with one exception: The diagnosis of substance abuse. It appears that the number of substance abusers who were admitted had increased significantly, but the apparent increase is probably an artifact. In the 2 previous reports, substance abusers were given the diagnosis of depression because Medicaid did not pay if the primary diagnosis was substance abuse. In this report, substance abusers were dually diagnosed as depression/substance abuse, and these admissions were identified as substance abusers instead of as depressives.

Table 1.—Distribution by Hospital, Diagnosis, and Sex

	Queen's			Castle			Totals		
Dx	Men	Women	STot	Men	Women	STot	Men	Women	GTOT
SCH	105	69	174	71	62	133	176	131	307
DEP	60	59	119	58	65	123	118	124	242
DYS	1	3	4	0	1	1	1	4	5
BIP	21	36	57	10	20	30	31	56	87
ALC	7	8	15	40	19	59	47	27	74
SUB	19	15	34	99	46	145	118	61	179
OBS	16	12	28	4	0	4	20	12	32
OTHER	32	43	75	22	37	59	54	80	134
TOTALS	**261**	**245**	**506**	**304**	**250**	**554**	**565**	**495**	**1060**

DX = Diagnosis; SCH = Schizophrenia; DEP = Depression; DYS = Dysthymia; BIP = Bipolar; ALC = Alcohol; SUB = Substance abuse; OBS = Organic brain syndrome; STot = Subtotal; GTot = Grand total

Table 2.—Percentage of Admissions—Distribution by Diagnosis and Year

Diagnosis	1987	1990	1993
SCHIZOPHRENIA	30	29	29
DEPRESSION	16	25	23
DYSTHYMIA	13	2	<1
BIPOLAR	10	11	9
ALCOHOL	6	4	7
SUBSTANCE ABUSE	3	8	17
ORGANIC BRAIN SYNDROME	2	1	3
OTHER	19	20	13

For the diagnoses of alcohol and substance abuse, Castle admitted 4 times the number that Queen's admitted because Castle has an alcoholism and addictions program and Queen's does not.

The distribution of patients by the number of admissions is different in this report. In the first 2 reports, about three-fourths of the patients (1,927 or 77%, and 1874 or 75%) had only one admission. In this report, about three-fifths of the patients (654 or 61%) had only one admission.

Discussion

An analysis of the data on inpatients over a 7-year period (1987 to 1993) shows:

- The distribution of patients by diagnosis is nearly the same in all 3 reports.
- The distribution of patients by number of admissions is similar in the first 2 reports (all psychiatric admissions on all islands) but is different in the current report (psychiatric admissions of Medicaid recipients on Oahu only).

When admissions to psychiatric wards are studied and Medicaid recipients are compared to the general population, the following conclusions can be made:

1. The percentage of Medicaid patients who were hospitalized only once during the 18-month study period of this report (66%) is less than that of the general population (in studies of 2 earlier 18-month periods, 77% and 75%).
2. Likewise, the percentage of Medicaid patients who were hospitalized more than once is greater than that of the general population (34% versus 23% and 25%).
3. Multiple admissions of Medicaid recipients accounted for 62% of the total admissions, while multiple admissions for the general population accounted for 44% and 48% of the total admissions.

In summary, Medicaid recipients were readmitted more frequently than the general population, and their readmissions accounted for a higher percentage of the total admissions.

- Of all the inpatients covered in the 1989 and 1992 reports, there were 342 patients who had been admitted at least once in both reports. In the 1989 and 1994 reports, the number is 105, and in the 1992 and 1994 reports, the number is 167. There were 43 patients (4% of the Medicaid recipients in the 1994 report) who had been admitted in all 3 reports. Twenty-seven patients in this group (63%) had at least 2 admissions in the 1994 report. This group can be considered to be the core of the chronically mentally ill with multiple hospitalizations in the past 7 years.

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Table 3.—Distribution By Year and Number of Admissions

No. of Admissions	1	2	3	4	5	6	7	8	9	10	12	Totals
Year												
1987	1927	359	120	57	25	5	5	2				2,500
1990	1874	370	134	58	28	15	9	5	5	2		2,500
1993	700	207	78	31	17	13	5	5	3		1	1,060

Table 4.—Distribution of Patients with Admissions in 2 or 3 Reports

	1989/1992	1989/1994	1992 /1994	1989, 1992/1994
No. of Patients in both Reports	342	105	167	
No. of Patients in 3 Reports				43

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vices into existing programs lacked clearly defined goals related to this effort. Funding was either absent or had to be diverted from other programs. HIV services were given low priority in view of other pressing service needs. Inconsistent staff training and discomfort with the subject matter also hampered the development of effective, consistent HIV interventions. These agencies deferred most often to mandated HIV education in schools, which teaches knowledge about HIV. It is well established, however, that knowledge alone does not change high-risk behavior.[9]

The results of this study suggest that in order for HIV/AIDS-related programs to be successful, several minimal conditions need to be fulfilled (Table 2). They include well-defined AIDS/HIV-specific organizational goals and policies, designated funding, selection of experienced and culturally sensitive key personnel, incorporation of community involvement and natural social networks, and thoughtful evaluation. In many communities, these conditions have been met better by new, small community-based organizations formed directly as a result of the HIV/AIDS crisis.[10] Such an approach would allow a specific focus on HIV programs without competition for financial and staff resources from other programs within the same institution. Unfortunately, at the time of our survey the only HIV-focused agency did not effectively reach a large number of young teenagers. A separate organization with a focus on HIV prevention in adolescents and a combined health and psychosocial approach is needed.

Table 2.—Conditions for Successful HIV/AIDS Programs

1. A clear mission and legitimate, well-defined AIDS/HIV-specific organizational goals.
2. Funding targeted at these specific goals.
3. Selection of experienced key personnel.
4. Adequate risk perception of target population by staff.
5. Cultural sensitivity to population served.
6. Community involvement and support.
7. Recognition and utilization of naturally occurring social networks of youth.
8. Effective evaluation.

The results of this study also suggest that while those health agencies surveyed appeared more proactive in their HIV activities, they reached relatively few younger adolescents. This study did not compare Hawaii's physicians' similarities to Mainland physicians, where it has been noted consistently in studies that due to time constraints, lack of comfort and lack of training, sexuality, and drug abuse are not discussed with most adolescent patients. Concerns about underutilization of physician services have fostered the local movement to develop school-based health centers in Hawaii. Physicians, who generally are respected as authorities in health-behaviors of adolescents, can increase their influence in several ways. In clinical care they can follow the "Guidelines for Adolescent Preventive Services" (GAPS) of the American Medical Association. They will need to routinely and confidentially discuss sexual activity, drug abuse, and other risk behaviors with all adolescent patients. Physicians who serve as consultants or on boards of directors of youth agencies can help assure that proactive HIV/AIDS prevention programs are developed. They can lobby legislators for funds to support such programs. Finally, they can participate in the development of a statewide collaborative network of adolescent-focused HIV prevention services that would include private and public health and social service agencies, schools, churches, the business community, and public officials. Anticipatory guidance related to STDs, safer sex practices, pregnancy and contraception should be provided by all youth agencies before, not after, a teenager becomes sexually active.

Very little research has been done on the importance of community organizations in the social networks of adolescents and how these organizations actually influence teen behavior. Initial findings soberingly suggest that young teens more often follow the beliefs and behavioral choices of often misinformed peers and parents rather than those of teachers or community agencies who frequently lack credibility or access.[12] More extensive social network analyses of adolescents may provide important information to community agencies on how to develop HIV-intervention programs that are not only accessible but also utilized by teens or by those persons who have the greatest likelihood to influence teen behavior. We plan to continue such research.

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Bone Mineral Content in Children

➤ *Continued from Page 387*

physical activity affects BMC. However, we did categorize the subjects into active and inactive groups and found no significant association of activity with BMC.

Reid et al found BMC at the forearm bone of Polynesian women was about 20% higher than that of white New Zealand women.[5] In the subjects we tested, we found that BMC at the os calcis is about 20% greater in Hawaiian girls than in Caucasian girls, suggesting that the factors responsible for this difference operate early in life.

The reasons for inter-ethnic differences are not certain. In blacks, an increase in muscle mass has been shown that may be causally related to higher BMC. Hawaiians resemble blacks in having more muscle and denser bones than whites.[6] Muscle mass may influence bone mass by determining the magnitude of the forces transmitted through the skeleton. Another consideration is the differences that have been found between blacks and whites in the level of calcitropic hormones, which may be important to the development of a higher bone mass.[7] However, in another study by Reid and co-workers, their results demonstrated that Polynesians have slightly lower levels of 25OHD than whites, but did not differ significantly from them in other biochemical indices of calcium metabolism.[8]

In summary, differences in BMC by ethnic group, age, height, and weight were observed: BMC was higher in Hawaiian than in Asian or Caucasian children. A greater number of Filipino children need to be included in future studies to make a stronger representation of this ethnic group. The data suggest that ethnic differences may develop early in life. If these differences are maintained into adulthood, then different ethnic groups would differ in susceptibility to osteoporosis later in life.

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News and Notes Henry Yokoyama MD

Life in These Parts

Bumper stickers.—A pickup truck with the message, "The worst day fishing is better than the best day working."

The April of Her Age.—Hilo psychiatrist **John Cummins Mebane** has authored a soft-cover book, *The April of Her Age*, a romantic novel about Princess Kaiulani, a vibrant young teenager, and Robert Louis Stevenson, a frail, middle-aged, married author.

Unforgettable Event

Retired eye doc **Bob Wong** has been one of the major contributors to the John A. Burns School of Medicine for many years. One day, some years ago, Bob was invited to visit the school to view one of his contributions. The 1968-69 contribution had been designated for an anatomy department library. He entered the anatomy room where 25 to 30 gleaming white skulls awaited his inspection. Bob was relieved to learn later that the skulls were Hong Kong imports and hence not *kahuna* hexed.

(A Becky Kendro contribution.)

Triathlon Medics

Kona pediatrician **Bob Laird** is in his 13th year as medical director of the ever-popular Gatorade Ironman Triathlon. Fifty-eight physicians from all over the world comprised part of the 300 volunteers (which also included 88 nurses, 29 paramedics, emergency medical technicians, intensive care technicians, and even a race psychologist and a minister.) Last year, the triathletes required 498 medical visits, 269 intravenous medications, and 6 were hospitalized.

HMA President

Fred Holschuh, ER physician and immediate past chief of staff of Hilo Medical Center was installed as HMA President in October at the HMA's 138th Annual Scientific Meeting at the Ritz Carlton Mauna Lani.

Fred attended Columbia Medical School, interned at Queen's and took his residency at Kauikeolani Children's and spent two years in the U.S. Public Health Service Indian Health Service. He is co-founder of the Hawaii Emergency Physicians Associated, and past president of the Hawaii County Medical Society.

Physicians Speak Up

In October, **J.I. Frederick Reppun** comments on the successful occupation of Haiti and suggests, "Why not go a step further and require that the Haitian military is abolished as well? Why does that small, poor country need military forces at all? Certainly not for offensives, and not even for defense, now that the Caribbean and the Americas are largely governed by democracies."

Physician Moves

In September internist **Denise L. Parnell** opened her office at St Francis Medical Center, 2228 Liliha Street, Suite 307. Internist **Anthony Paul Siu** joined the Central Medical Clinic at 321 N Kuakini Street, Suite 201. Psychiatrist **Gerald A. Correa** joined the Kapiolani Counseling Center Aiea satellite, 99-115 Aiea Heights Drive, Suite 276.

In October ophthalmologist **Melanie Tantisira** joined the Camara Eye Clinic at St Francis Medical Office Building, Suite 106.

Oncologist-hematologist **John Hayward** joined the Kauai Medical Group.

Family practitioner **Marie Agleham** joined the Kuhio Medical Center on Kauai.

Medical Tidbits

- The October issue of *Archives of Pediatrics and Adolescent Medicine* published a study that is several years old showing that hospital gowns and scrub suits do not promote infection control as long as hands are washed. **Marian Melish**, head researcher for the study at Kapiolani neonatal intensive care unit, says gowning just costs money—$120,000 a year to launder scrubs at Kapiolani.
- Researchers found that surgeons do a better job at the operating table with a little background music. A study of 50 men, ages 31 to 61, who regularly listened to music when operating showed lower blood pressures and pulse rates and improved nonsurgical mental exercises.
- A study of nationwide hospital discharge data of 205,021 patients aged 65 and older who had MIs in 1987 suggests that costly operations such as bypass did little or nothing to extend their lives.
- Yo-yo dieting.—NIH researcher **Susan Yanovski** and her colleagues with the National Task Force on the Prevention and Treatment of Obesity reported in JAMA that repeated bouts of weight loss and gain did not increase body fat, raise the risk of heart disease, or psychologically harm the dieter—and that yo-yo dieting is preferable to remaining obese.

Qualifying for Medicaid in Nursing Homes—Congressional Changes

- You can have no more than $2,000 in savings, excluding the value of your home.
- If you gift assets to your children to qualify for Medicaid, you may have to wait 36 months before getting assistance. Under the old law, you could receive Medicaid no matter how much you gave away, but now if you gift $300,000 or more, you may have to wait up to 100 months.

Sportsmen and Sportswomen

The Hole Truth.—Soon after my husband and I played golf for the first time, I overheard him talking to a friend about it. "I wish my wife would take up the game," his friend said.

"It was great having her along," replied my husband. "But it sure is tough saying, 'Nice shot, honey' 142 times with any sincerity."

(Barbara Oakes, *Readers Digest*, July 1994)

In God We Trust.—I teach mathematics in Pittsburgh at Duquesne University, which was founded by the Holy Ghost Fathers. Once I was part of a golf foursome with Father Roach, then the University's chaplain, and two other priests. As we were getting to tee off, Father Roach turned to me, "Dan, you keep score," he said. "You are the only one we trust."

(Donato DeFelice)

A Few Choice Pet Peeves.—

- Ball washers go dry.
- Range balls from the nearby practice range litter the rough of a hole where your drive has disappeared.
- When a player in the group ahead, already holding up play, circles back looking for a lost club.
- The golf cart runs out of power going uphill on the 12th hole, the farthest point from the club house.
- Your partner runs out of balls on the front nine.
- Your opponent hits a putt and immediately begins to complain, only to see the ball go into the hole.
- The automatic sprinklers come on and spray you as you address the ball.
- You are not invited to play through a slow group—or you are invited to play through and promptly rush dub your next shot.
- The wind shifts and gusts against you at the top of your backswing.
- The practice green proves to be half as fast as the greens on the course.
- People mark their balls with quarters or 50-cent pieces.
- A player has $2,000 worth of clubs, but never has a tee to his or her name.
- You've changed into your spikes and the tile floor in the rest room is as slippery as a skating rink.

(Nick Seitz, *Golf Digest*, December 1994)

Condensed Excepts from Stitches

Overheard in a dental office.—As a discussion about *euthanasia* was underway, one patient piped up, "We'd do better to worry about the *youth* in our country, instead of those in *Asia*."

(Susan Perry, Ketchikan, Alaska)

Two for One.—In the middle of a busy shift in the ER, the charge nurse asked me to see a very sick child in the pediatric room.

I started to interview the parents while examining the child in the crib. The child, about 18 months old, was sitting quietly wearing only a diaper. As I got the details from the parents, I examined the child from head to toe. To my amazement, the child appeared perfectly well. In fact, she started to laugh and coo and became quite playful. I turned to give them my reassurances, when I found them looking at me with amazed horror.

With her mouth hanging open, the mother said, "But doctor, that's not the sick one!" Only then did I notice the five-month-old limp, sweaty, red-faced youngster hanging over his father's shoulder.

I may have said something like, "I like to warm up on the healthy one," but I don't think they believed anything I said after that fiasco.

(Jonathan Isserlin)

The Wrong End.—One very busy day at the office, with all the examining rooms full, the waiting room full, and of course the phone ringing urgently, I has a patient ready for a pelvic and Pap smear. At the propitious moment of insertion of the speculum, I said, "Say aaah."

"What did you say?" she replied.

There's no graceful way out of that situation.

William Calderwood
Sun City West, Arizona

A Brain User's Guide to Aging.—"Scientists are certain that a robust older mind is affected by influences that occur throughout a life time."

- Seek variety—it's the spice of life.
- Be flexible.
- Find peace—those who are depressed, anxious, angry, or discontented are vulnerable.

In Childhood:

- Eat right—breast-feeding fosters a healthy brain.
- Get lots of stimulation.
- Stay in school; education boosts late-life skills.

Young Adulthood:

- Make many friends.
- Find a mentor.
- Marry someone smarter than you.
- Take adult courses, but don't cram.

Middle Age:

- Develop expertise.
- Save more.
- Achieve your major life goals now.
- Enjoy the bustle.
- Avoid burn out.

After Age 65:

- Seek new horizons.
- Engage the world.
- Take a daily walk.
- Keep control.

From *U.S. News* , November 28, 1994

Excerpts from "You Know You're a Mid-Life Male When..."

A compendium of mid-life humor compliments of Abbott Lab.

- You play baseball on Sunday and hurt till Wednesday.
- The hair in your ears is longer than the hair on your head.
- You turn out the lights for economic reasons instead of romantic reasons.
- Your diastolic blood pressure is higher than your golf score.
- Attractive women feel safe enough to flirt outrageously with you.
- *Dribbling* no longer makes you think of basketball.
- Tying your shoes becomes an aerobic exercise.
- You start sleeping on the other side of the bed to be closer to the bathroom.
- Your arms aren't long enough to hold your reading material.
- Your systolic blood pressure is higher than your IQ.
- You start *arranging* your hair instead of combing it.
- You feel like the morning after when you didn't do anything the night before.
- You're absolutely certain they're building stairs steeper these days.

Potpourri

A hospital director was a strict advocate of managed health care: Three days and you're out. No discussion, no sob stories, no exceptions. One day he passed on and found himself in the anteroom to heaven. "Hmm," said St Peter sternly as he closed the director's file, "I guess we can admit you."

"Thank you," cried the director. "I was a bit worried. People accused me of being rigid, insensitive, and uncaring, but now you've let me into heaven!"

"Well, yes," said St Peter, "but only for three days."

From "Laughter, the best medicine,"
Readers Digest, November 1994.

Recent studies claim there are millions of adults who can't read or count. And if you don't believe it, look at the folks in front of you at the express checkout.

Jay Trachman, *One to One*

A cowboy applied for an insurance policy. "Have you ever had an accident?" asked the agent.

"Nope," replied the applicant, "though a bronc did kick in two of my ribs last summer and a coupla years ago a rattlesnake bit me on the ankle."

"Wouldn't you call those accidents?" asked the puzzled agent.

"Naw," the cowboy said. "They did it on purpose!"

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The Weathervane Russell T. Stodd MD

There was no respect for youth when I was young, and now that I am old, there is no respect for age.

Huntington Potter and co-workers of Harvard Medical School published in *Science* stated that a drop of tropicamide can allow for an early diagnosis of Alzheimer's disease. Eager to grasp all bits of information regarding this common ailment, the evening TV news and newspapers tell us that a dilute solution of tropicamide will result in a 23% pupil size change in Alzheimer's patients compared to a 5% change in normal patients. Obviously much more study and data collection must be accomplished before ophthalmologists become first-line diagnostic sources for Alzheimer's disease.

On the whole humans want to be good, but not too good, and not quite all the time.

After 10 years and many thousand reports, the Prospective Evaluation of Radial Keratotomy (PERK) has at last been released. Eighty-five percent of patients saw 20/40 or better without glasses after surgery, but the media gave wider coverage to the 43% incidence of delayed hyperopic shift. One might even get the impression that the big-pocket laser people are steering the media in an attempt to undercut (no pun intended) RK in favor of photorefractive keratectomy. Would business people do such a thing? If a simple, safe, inexpensive, cost-effective operative procedure produces the desired result, why would anyone buy a half-million dollar machine that requires technicians and exotic gases? The years of technical labor, investment, multiple studies, incredibly expensive devices, and stock sales could be seriously threatened if photorefractive (laser) keratectomy (PRK) does not win the hearts of all who desire refractive surgery. Perhaps we need a new social law, "the medical-industrial complex fuels medical care inflation."

We are born princes and the civilizing process makes us frogs.

The saga of Dr Samuel Pallin and his patent for the so-called cataract *chevron* incision continues. He was attacked by Dr Herve Byron writing an editorial for *Ocular Surgery News*, and Dr Pallin defended himself by accusing OSN of a hatchet job. He explains his behavior by claiming that "many colleagues" think that patenting a technique is a fair way to establish originality, and that ophthalmologists are subject to the laws of this country. For purposes of the record, harken to Paragraph 9.08 of the *AMA Code of Medical Ethics*: "The intentional withholding of new medical knowledge, skills, and techniques from colleagues for reasons of personal gain is detrimental to the medical profession and to society, and is to be condemned."

Please, Uncle Sam, I would rather do it myself.

If any one item of American political philosophy came out of the recent election (except in Hawaii!), it is that Americans want a 180-degree turn in their leadership. Without question they want less not more government. Therefore, it follows that programs that encourage individual management, such as freedom of choice of medical care, tax deductible IRAs, welfare redefinition, and reduction of the tax burden, are what the majority of voters expect.

No matter how you slice it, managed competition sucks.

The National Rural Health Association (NRHA) has joined the National Association of Community Health Centers (NACHC) in its suit against the Department of Health and Human Services to stop implementation of Medicaid waivers allowing statewide managed care operations (HMOs). As stated in last month's "Weathervane," waivers have been granted to Hawaii, Tennessee, Oregon, and Rhode Island. The NRHA asserts that the waiver programs have caused material harm to rural residents who rely on federally qualified health centers and rural health clinics. If the court supports the law suit, Med-QUEST will be jeopardized.

The trouble with the rat race is that even if you win, you're still a rat.

If you endured a decrease in your net income for 1993, you are among the national average for physicians. The most recent findings of the *Medical Economics'* ongoing survey revealed an 8.38 drop in median net income for office- based MDs and DOs. Hardest hit were physicians in the far west (including Hawaii), where the median net income fell by 14.18. The culprit in most cases was not a decrease in revenue, but inflation and rising office expenses.

Dr Kildare, would you dare kill?

And in Oregon the voters cast their ballots in favor of a measure allowing doctors to assist terminally ill patients to commit suicide. The AMA Board of Trustees flatly opposed the issue stating that it is fundamentally inconsistent with the physician's professional role in caring for patients. Citing the Hippocratic Oath, "*primum no nocere*" ("First, do no harm"), Board Secretary, Thomas Reardon MD, a family physician in Portland, Oregon, spoke for the Board in rejecting the concept. The problem for the AMA Board and for practicing physicians is that many Americans believe that terminally ill patients should have the right to physician-assisted suicide. Oregon's statute is the first to be passed by the electorate, and other states are sure to follow.

Glory may be fleeting, but obscurity is forever.

Do you want to drive a safer automobile? According to the Institute for Highway Safety, the Volvo 240 (4 door) has a death rate of zero, where 100 represents the average! Next safest is the Plymouth Voyager passenger van at 18, followed by the Mercedes 190 D/E at 27, and the Buick Riviera at 36. The least safe is the Chevrolet Corvette at 327, followed by the Pontiac LeMans (2 door) at 300, Isuzu Amigo 291, Ford Mustang 264. Driver profiles are not included in the study.

Addenda

- There is nothing so small that it can't be blown out of proportion.
- Philosophy teaches us to bear with equanimity the misfortunes of others.

Aloha and keep the faith—rts ■

P. John Seward MD

➤ *Continued from Page 378*

And when we leave this lovely place, help us take the message back. Because that's exactly what we're going to do. Your Board is going to take this message on the road.

We're going to take this message—about this House and about this AMA—to physicians in every corner of the country.

And we're not just going to talk. We're going to listen. We need your feedback. We need their feedback. We need all of you to help make this what we all want it to be.

Because, together we are the profession. You. And me. And all of us. We are the profession!

Finally, I never told you what happened that day, out in the cornfields in Illinois. Fortunately, it had a happy ending.

Hand and patient both survived the experience. And so did this doctor—because we had the right tools and knew how to use them.

You know, on behalf of your Board of Trustees, I took the extraordinary step of coming before this House today to let you know that your AMA has the right tools.

The challenge is to know how to use them.

It is our challenge. It is your challenge.

And with the help of this House, together I know we will use them well.

Let us begin—now. ■





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The Fishhook of Maui

Hina, goddess of corals, spiny sea creatures, and the mother of all reef life, provided the shells from which Maui, the demigod, made his famous fishhook. With this hook, named *Manaiakalani* (come from heaven), Maui fished the Hawaiian Islands out of the sea.

Maui used an *Alae* bird, sacred to Hina, as bait for his legendary hook. The bird struggled as it sank to the depths. It came apart. Thus the islands came up separated and not all in one piece as a continent.

There is some mention of an actual immense fishhook called the "fishhook of Maui." King Kamehameha I supposedly owned it for awhile. He failed at various attempts to break it. To his dismay, a brother-in-law did manage finally to break the hook, and it has not been seen since.

Editorials

February Issue
Norman Goldstein MD, Editor

The scientific articles in this issue of the *Hawaii Medical Journal* come from three different areas of medical care in Hawaii.

Robert L. Anders DrPH, RN, CNAA, is an associate professor and director of Research Services at the UH School of Nursing. His paper on the "Characteristics of Long-term Mentally Ill Patients: Policy Implications" is very timely. Just read our local newspapers to see what's happening in our State mental hospital.

The School of Public Health is represented by Gertraud Maskarinec MD, MPH, a graduate student, and Alan R. Katz MD, MPH, Assistant Professor in the Department of Public Health Services. Their article on "Systemic Lupus Erythematosus" is another example of Hawaii's natural clinical laboratory—*Our Rainbow of Skins and People*.

The study of Hawaii physicians using a pre-participation examination form for athletes is a collaborative effort of family practice: Health, Physical Education and Recreation Department; Orthopedic Rehabilitation and Sports Medicine Department; and Surgery Department at the John A. Burns School of Medicine.

The authors of this study were able to qualitatively assess the existing standards of screening high school students for participation in athletic activities. The results of their study clearly calls for an improvement in the standards of pre-participation screening of Hawaii's interscholastic youth. The impact of their findings has opened the door for a vast improvement in the pre-participation screening requirements for interscholastic student athletes.

Following the presentation of the findings of this study to the Hawaii High School Athletic Association, pre-participation screening requirements for interscholastic student athletes in Hawaii will now include a comprehensive medical history, a cardio-pulmonary examination, a maturational assessment, a musculoskeletal examination, and a criteria for participation clearance. The results of this research will allow the physicians in Hawaii to better facilitate the pre-screening evaluations for high school student athletes and aid in the mitigation of unnecessary and preventable athletic-related injuries and illness. This study will appear in the *Journal* next month.

We are pleased to present these scientific articles.—NG.

Festschrift—May 1995

fest•schrift (fest'-shrift', n, pl, fest-shrift•en or festschrifts. A volume of articles, essays, etc., contributed by many authors in honor of a colleague, usually published on the occasion of retirement, an important anniversary, or the like.[1]

The last time we had a *Journal* festschrift was November 1982 in honor of Harry L. Arnold Jr, MD, who was editor of the *Hawaii Medical Journal* for 41 years.

We kept the festschrift a secret from our editor right up to the day before copy was to go to the printers. Then Harry saw the copy cross his desk at the *Journal* office! The special festschrift was no longer a secret:

> **The Editor has the last word**[2]
>
> Thank you all!
>
> A secret it was, but I had to see it in page proof and the secret was out. To say I am deeply touched and profoundly grateful to my many dear friends—Harold, Dave, Denny, Al and Al, Vic, Bruce, Bob, Sam, Claude, Dick, Allan, Erv, Fred, Allan, Frank, Gene, and Norman—would be an understatement, but it is the best I can do. And to the many friends and firms who bought ads, my deepest thanks also. I hope it was a good cause. I'll try to make it so.—A_2

Our May 1995 issue will be another festschrift honoring another very special physician. We *will* try to keep this festschrift a secret.—NG.

References

1. *Random House Dictionary*. 1966; 525.
2. *Hawaii Med J*. 1982; 41; 11.

Historical Notes

John A. Breinich
Executive Director
Hawaii Medical Library

Obstetrics in Hawaii has an interesting past. The earliest reference to the use of a general anesthetic in Hawaii was in the field of obstetrics. On February 16, 1850, a missionary physician in Hilo named Dr Charles H. Wetmore administered ether to his wife as she was having difficulty in giving birth to their first child. The child, however, was stillborn.

In June 1890, Kapiolani Maternity and Gynecological Hospital was founded. It was located at the corner of Makiki and Beretania Streets in Honolulu.

Contraception services were first provided on plantations in 1929 and grew considerably for the next 10 years. Palama Settlement in Honolulu established a male sterilization clinic in 1930 and a mother's



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health (birth control) clinic in 1931. The Queen's Hospital had a Maternal Health and Birth Control Clinic in full operation in 1932.

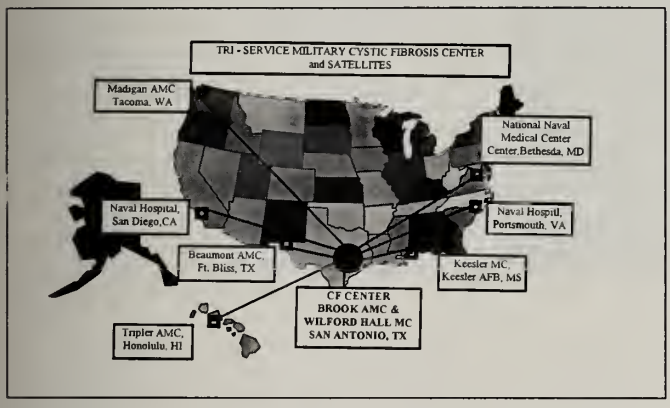
In 1960, Enovid was approved as a birth control pill and became the first oral contraceptive available for general use in Hawaii. It had been used since 1958 for endometriosis and cycle control.

For more information on the historical aspects of obstetrics and contraception in Hawaii, visit the exhibit at Hawaii Medical Library in February and March.

Military Medicine

Hawaii's Cystic Fibrosis Center

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center



In December 1992 the Tri-Service Military Cystic Fibrosis Center in San Antonio, Texas, was approved by the Center Committee of the Cystic Fibrosis Foundation. This Center is a uniquely organized CF center because it comprises a network of satellite centers at many military health care facilities. This organization permits continuity of services available to eligible patients with cystic fibrosis.

The Department of Pediatrics at TAMC was designated a CF Center in July, 1994. This is the first and only CF center in the state of Hawaii. The medical director is Dr Charles Callahan, a pediatric pulmonologist, who leads a multidisciplinary team of specialists. The team holds a monthly clinic for all eligible patients with CF. The team consists of a pediatric gastroenterologist, dietician, social worker, clinical nurse specialist, clinical psychologist, and a respiratory therapist. Monthly multidisciplinary clinics are held for patients and their families. Fifteen patients with CF are followed regularly. This population comprises over half of the CF population in Hawaii.

Dr Callahan holds a CF clinic on the last Thursday of the month at Kapiolani Medical Center. This clinic is available to all patients with CF in Hawaii. Six patients are currently followed, and it is estimated that there are another 20 to 30 patients with CF who might benefit from the services provided. Dr Callahan and Dr Berkeley Powell, a pediatric geneticist at Kapiolani, provide genetic counseling to families. These physicians hope to establish genotyping for all CF patients in Hawaii. This would be the only state to have established statewide genotyping for all patients. This project is possible because of the relative rarity of CF in Hawaii. Caucasian births are at a 1:2000 risk of having CF. The estimated risk in Asian infants is 1:80,000.

The multidisciplinary CF clinics at Tripler and Kapiolani provide comprehensive longitudinal care for CF patients. Established protocols for management of lung disease, GI disease and other manifestations of CF are available and individualized care is provided. In addition to providing care, the Center serves as a clearinghouse for information relating to research, new therapies, and available services.

Patients, families and physicians who are interested in learning more about the Cystic Fibrosis Center of Hawaii can call Dr Charles Callahan at (808) 433-4820.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

HMA President's Message

Frederick C. Holschuh MD

The RBRVS is now up for the federally mandated five-year review which will be critical for the future of the Medicare RBRVS. Also of concern is the idea of the RBRVS being used beyond Medicare, ie, by third-party carriers.

In response to a HCFA invitation based on this federal mandate, the AMA/Specialty Society RVS Update Committee (RUC) is looking at how the RUC can play a key role in this five-year review. This review will be critical because a *new methodology will be developed for calculating the practice cost component* of the RBRVS, and the Secretary of the U. S. Department of Health and Human Services (DHHS) will conduct the *first comprehensive review of the relative values for physician work.*

The HMA has established its own HMA/Specialty Society RVS Update Committee (HRUC) under the chair of Dr Allan Kunimoto. HCFA has just published in the Federal Register the Final Notice containing the 1995 RBRVS which invites public comment on what codes should be reviewed during this five-year review. *Medical societies and individuals will be asked to explain in detail how the clinical work involved in a service that is thought to be inappropriately valued compares to work of one or more reference services.*

The timetable for this review process is short. The AMA RUC needs to submit its recommendations to HCFA in September 1995; HCFA is to publish proposed changes in March 1996; and the revised RBRVS will be implemented in January 1997. It is important that the HRUC submit comments and input wherever possible.

HMA is contacting specialty societies to participate on the HRUC. If you are interested in participating, please let HMA or your specialty society know.

This five-year review is the best current opportunity to address any problems identified by physicians with the relative values for physician work.

Legislative Committee.—Under the guidance of Dr Jack

➤ *Continued on Page 417*

HMA Council Highlights

January 6, 1994
Roger T. Kimura MD, Secretary

The HMA Council meeting was called to order by Dr Frederick Holschuh, President at 5:40 pm.

Present.—Drs F. Holschuh, President; C. Lehman, President-elect; R. Kimura, J. Spangler, A. Don, C. Kam, R. Stodd, A. Kunimoto, L. Howard, H.K.W. Chinn, E. Bade, D. Canete, M. Joshi, T. Smith, T. Au, P. Chinn, P. DeMare, S. Hundahl, M. Shirasu, K. Thorburn, C. Wong, J. Betwee, B. Shitamoto, W. W.Y. Chang, G. Goto, J. Lumeng, J. McDonnell, S. Wallach, N. Winn, C. Goto.

HMA Staff.—J. Won, N. Jones, B. Kendro, L. Tong, J. Asato, P. Kawamoto, A. Rogness, recording secretary.

• Dr Holschuh informed Council that being HMA President while the American Medical Association was in Hawaii for its interim meeting was one of his greatest experiences. The HMA received a lot of positive feedback from AMA physicians and was thanked for its hospitality. The luau HMA hosted at Germaine's for the AMA was a success. The AMA has already made arrangements with the Hilton Hawaiian Village to return to Hawaii in 5 years.

For Action

1) A motion was passed by Council that nominees Drs James Lumeng, representing HMA, and Carl Boyer, representing the American Cancer Society, serve two-year terms on the HMA Cancer Commission.

2) A motion was passed by Council to direct the HMA President to write a letter to the Board of Medical Examiners (BME) spelling out HMA's concern that nurse practitioners should not be allowed to prescribe medication without physician supervision. Dr McDonnell (our representative on the Formulary Advisory Board) will also file a report to the BME, if necessary.

3) Council approved the Membership Benefits Committee recommendation to continue with First Hawaiian Bank. First Hawaiian will enhance the existing program by: 1) Waiving the annual fee for First Hawaiian Bank's regular credit card customers. The fee waiver will be ongoing as long as the holder remains a member of the HMA and provides utilization of his/her credit card. 2) All FHB and/or other bank networks' ATM charges will be waived for all Level Three All-in-One customers. The Bank will also be announcing 20 new ATM locations in 1995.

4) A motion was passed by Council that the table charge for the Distinguished Medical Reporting Awards banquet (DMRA) will cover the cost of the DMRA event, the cost of the awards, and that any remaining funds from the event will be put toward the cost of the awards for the following year.

5) A motion was passed by Council to write a letter to Dr Christian Gulbrandsen inviting him to meet with the HMA

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This continuing education activity is pending approval by Hawaii Nurses Association Continuing Education Committee, which is accredited as an approver of continuing education for nurses by the American Nurses Credentialing Center's Commission of Accreditation. Approval due by March of 1995 for 32.5 hours of CEUs.

Executive Committee to discuss a report received that he may be interested in developing an international private medical school.

Component Society Reports

Honolulu.—President Dan Canete gave his report in the form of a high-tech projector presentation. 1) The County Executive Committee is active in using E-mail as a means to communicate with each other frequently. 2) The HCMS started mailing its monthly *HCMS Bulletin* to 700 nonmembers in the hope of increasing membership. To date there are six new members. 3) In order to recruit new members in the Leeward and Windward areas, the HCMS has started two membership committees: One at Castle and the other at St Francis-West. 4) Dr Canete reported that the Vision 2000 meeting will be held on May 19 (full day) and 20 (half day) at the Sheraton Waikiki.

Hawaii.—Dr E. Bade reported that Hawaii County met in late November and had its Christmas party on December 10. At the meeting new officers were elected. Dr Bade will continue as President, Dr Lorraine Sonoda Fogel will be Vice-President, Dr David Jung will be Secretary, and Dr Ian Ebesugawa will be Treasurer.

Maui.—Dr Joshi reported that the county had its Christmas dinner party, and the Hawaiian musical group *Hapa* performed. He will give an update at the next Council meeting on the small meetings organized at his home to hopefully gain membership and to get feedback from physicians on issues that involve them.

For Information

HMJ.—Dr Shirasu reported that the *Hawaii Medical Journal* is doing well. HMA has been publishing an issue each month including three or four special issues. There are approximately 50 articles on hold for future publication. New computer equipment was purchased for the *HMJ*. A financial report will follow in February or March.

RBRVS.—The AMA is asking each medical association to look at issues of RBRVS beyond Medicare. Third-party payers are beginning to look at RBRVS as a tool for reimbursement. Dr Holschuh, HMA President, has appointed an ad hoc committee to review this issue.

AMA Interim Meeting.—The two HMA resolutions on Harm Reduction and Workers' Compensation passed with some minor amendments. Dr Stodd will prepare a brief report for the next Council meeting.



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Prevalence of Systemic Lupus Erythematosus in Hawaii: Is There a Difference Between Ethnic Groups?

Gertraud Maskarinec MD, MPH,* Alan R. Katz MD, MPH**

This population–based study in Hawaii collected cases of systemic lupus erythematosus from medical facilities and a patient support group. A total of 454 cases was found and the prevalence was estimated at 41.8 per 100,000 population for 1989. The prevalence odds ratio for all non–Caucasians compared to Caucasians was 1.2 (0.9–1.5), for Japanese 1.3 (1.0–1.7), for Filipinos 1.5 (1.1–2.0), for Chinese 2.4 (1.7–3.4), and for Hawaiians 0.8 (0.6–1.1). Mortality rates were 3 times higher for non–Caucasians than for Caucasians in 1985 to 1989. Despite the observed differences, it remains unclear whether individuals with Asian or Pacific Islander ancestry are at higher risk for systemic lupus erythematosus. The variation in prevalence rates may be a result of differences in access to medical care and in survival.

Systemic lupus erythematosus (SLE) is an autoimmune disease of unknown etiology and most commonly SLE involves skin, joints, and kidneys. Because of the higher rates in women during their reproductive years,[1] sex hormones are believed to have pathogenic importance. Genetic and environmental factors (including viruses) are also suspected.[2–4]

Reported ethnic differences in SLE prevalence may provide evidence for hereditary risk factors. Individuals of African[5–10] and Native American[11–12] descent are affected more often than Caucasians. While some studies have reported high prevalence rates among Chinese[13] and other Asians,[14–16] a study from Japan[17] reports comparatively low prevalence rates (5 per 100,000). Evidence from New Zealand suggests higher rates for Polynesians.[18–19] Most population–based studies have reported prevalence rates of 40 to 50 cases per 100,000 population.[20–22] Prevalence and incidence of SLE have slightly increased over the last 40 years, probably because of earlier diagnosis, increased awareness of SLE, and prolonged survival.[23–25]

The multiethnic composition of Hawaii allows a unique opportunity for exploring possible ethnic differences in SLE prevalence. Two hospital–based studies were performed on Oahu. Serdula[26] estimated a prevalence rate of 14.6 per 100,000 for 1975; Catalano[27] a rate of 22.4 per 100,000 for 1980. Both studies concluded that prevalence rates for SLE were higher for Japanese, Hawaiians, Chinese, and Filipinos than for Caucasians. Since many SLE patients never require hospitalization, the prevalence of SLE found in the hospital–based studies was probably an underestimate of the true prevalence. Also, hospitalization may have occurred preferentially for certain ethnic groups. Therefore, the current study was designed to estimate prevalence of SLE in Hawaii among the general population.

Methods

The diagnosis of SLE is based on criteria published by the American Rheumatism Association (ARA).[28] However, for the purposes of this study, any patient who had been given a diagnosis of SLE by a physician was considered a case. In

TABLE 1.–Demographic Characteristics of 454 Systemic Lupus Erythematosus Patients in Hawaii, 1989.

	No.	%
Sex		
Male	53	12
Female	401	88
Ethnicity		
Chinese	46	10
Filipino	63	14
Hawaiian/Part Hawaiian	52	11
Japanese	127	28
Caucasian	97	21
Others	69	15
Age		
<20 years	41	9
20-39 years	176	39
40-59 years	174	38
60 years and older	63	14

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conversations with the physicians, many of whom were rheumatologists, it was ascertained that they applied the ARA criteria. Two SLE case–finding strategies were used:

1. Five medical centers, 5 rheumatologists, 8 nephrologists, and 190 primary care physicians were contacted and asked for information on every case of SLE they had seen during 1988 and 1989. Social Security Number (SSN), age, sex, zip code, and ethnicity were abstracted from the medical records. A one–page questionnaire requesting demographic and medical information was mailed to each patient whenever the physician/medical facility agreed.

2. The Hawaii Lupus Foundation, a state–wide patient support group, sent a copy of the questionnaire to all 500 individuals on their mailing list.

Data on cases obtained from both sources were entered into a computerized data base and duplicates were eliminated by matching for SSN. Prevalence rates were calculated using population estimates by age, sex, and ethnicity for 1989 from the Hawaii Health Surveillance Program (an unpublished report). Ethnicity information from this annual household survey is considered more reliable than census information because the ethnic categories used in the census are inappropriate for Hawaii's ethnically diverse population, especially because of the many children from mixed marriages. Six categories of ethnicity (Hawaiian, Japanese, Chinese, Caucasian, Filipino, other) were used for classification. Individuals with any percentage of Hawaiian ancestry were classified as Hawaiians. The category "other" includes individuals with mixed non–Hawaiian, unknown, and other ancestries.

A model with prevalence rates for SLE as the dependent variable, and sex, age, and ethnicity as independent variables, was constructed using logistic regression.[29] All deaths coded 710.0 (ICD–9) systemic lupus erythematosus were obtained from the state records of deaths for 1985 to 1989 and age–adjusted mortality rates were calculated. Statistical analysis was performed using the SAS® software package.[30]

Results

Altogether 588 cases of SLE were identified: 206 through rheumatologists and nephrologists, 159 through hospital records, 56 through primary care physicians, 46 through the Pediatric Arthritis Center, and 121 through the Lupus Foundation. After deleting duplicates, 454 prevalent cases remained, giving an estimated SLE prevalence rate of 41.8 per 100,000 population in 1989.

The cases are predominantly women and distributed across all ethnic groups (Table 1). Prevalence rates vary by sex, age, and ethnicity (Tables 2 and 3). Results of the logistic regression (Table 4) show statistically significant increased SLE prevalence odds ratio for individuals of Chinese and Filipino ancestry when compared to Caucasians. Observed differences for the other ethnic groups failed to demonstrate statistical significance. Rates of all non–Caucasians compared to Caucasians were insignificantly higher.

Seven hundred sixteen questionnaires were mailed: 500 to members of the Lupus Foundation and 216 to patients identified through medical records. One hundred thirty (26%) of the former and 87 (40%) of the latter were returned. Of the 217 returned questionnaires, 199 were usable for analysis, reflecting 78 cases identified through the medical system only, 73 identi-

TABLE 2.–Estimated Prevalence of Systemic Lupus Erythematosus among Females, Hawaii, 1989.

Rates are per 100,000 population.

Age	Total		Chinese		Filipino		Hawaiian/ Part Hawaiian		Japanese		Others		Cauca-sian		Non-Cauca-sian	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
<20	33	20	4	93	10	67	6	13	3	18	8	16	2	7	31	23
20-39	161	91	17	244	33	173	20	68	35	109	30	77	26	51	135	106
40-59	150	127	11	172	14	98	14	78	50	149	20	115	41	146	109	121
60+	57	70	7	98	3	38	5	69	18	49	7	80	17	133	40	59
All	401	74	39	157	60	107	45	44	106	88	65	57	86	71	315	76
Age-edj.*		74		161		104		53		81		68		71		78

* Age adjusted by the direct method to the total population of Hawaii, 1989.

fied though the Lupus Foundation only, and 48 cases identified by both. Forty percent of cases had never been hospitalized because of SLE, 49% had been hospitalized 1 to 9 times, and 11% more than 9 times. Among the patients who had never been hospitalized, 35% were Caucasian, whereas only 12% of those who had been hospitalized at least once were Caucasian. For Caucasians the mean number of hospitalizations related to SLE was 1, and for all others it was 2.7. SLE patients identified through the Lupus Foundation differed in almost all characteristics from the cases identified through medical records (Table 5). SLE Mortality rates were low for all ethnic groups, but 3 times higher for non–Caucasians than Caucasians (Table 6).

Discussion

The prevalence rate of 41.8 per 100,000 is consistent with other reports.[9,20-21] Nevertheless, it probably underestimates the true prevalence rate. Patients suffering from a mild form of SLE, who have infrequent contact with the medical system or who are treated by primary care physicians in rural areas, could have been missed in this study. The fact that 60% of the foundation members were not located through the medical system suggests either that a considerable number of SLE patients may have been missed or that these members were not true cases. If a proportionate number of patients who are not members of the Foundation were missed, there could be as many as 950 SLE patients in the state or nearly 90 per 100,000 population. For many reasons, that appears unlikely. However, some self– reported diagnoses may not have been confirmed cases of SLE. If only cases identified through medical records were considered prevalent cases, the estimated prevalence rate becomes 36.2 per 100,000, still much higher than reported in both previous studies.

A major shortcoming of this study lies in its reliance on physician diagnosis rather than the ARA diagnostic criteria. However, 365 out of 454 (80%) cases were identified through rheumatologists, nephrologists, and hospitals. Based on conversations with many of these physicians, the authors feel confident that the ARA criteria had been applied by these specialists. Therefore, ascertainment bias should be fairly small.

Although access to medical care is estimated to be above 95% in Hawaii,[31] Hawaiians and Filipinos, who form a larger part of the population in rural parts of the islands, were more likely to be missed during the case–finding process. Therefore, the prevalence rates for these ethnic groups are probably underestimates. Low health care utilization among Hawaiians may also have resulted in higher mortality due to SLE and lower prevalence of SLE. The rate for Chinese is less stable because of the relatively small Chinese population.

Compared to both earlier Hawaii hospital–based studies,[26-27] the two- to threefold higher prevalence rate in 1989 can be explained by the inclusion of SLE patients who never had been hospitalized. Forty percent of SLE patients in this study had never required hospital care. Caucasians experiencing fewer hospitalizations could explain the large ethnic differences found in the earlier studies. The results of this study differ from the earlier findings of a statistically significant increased prevalence rate for non–Caucasians. It has been documented that Caucasians have a later onset and a milder course than other ethnic groups.[32] The threefold increased SLE–related mortality for non–Caucasians in this study supports that finding. On the other hand, the differences in mortality could be a result of differences in medical care. Since Serdula's study,[26] the mortality rate for non–Caucasians has decreased by 50%, possibly a result of improved medical care.

Since prevalence is a result of both incidence and mortality, cross–sectional studies do not allow direct risk measurement; hence risk inference must be interpreted with caution. Although

TABLE 3.–Estimated Prevalence of Systemic Lupus Erythematosus among Males, Hawaii, 1989.

Rates are per 100,000 population.

Age	Total		Chinese		Filipino		Hawaiian/ Part Hawaiian		Japanese		Others		Cauca-sian		Non-Cauca-sian	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
<20	8	5	0	0	2	11	2	4	1	6	2	4	1	3	7	5
20-39	15	8	2	36	1	6	4	12	6	18	1	2	1	2	14	11
40-59	24	21	4	59	0	0	1	6	11	36	1	6	7	22	17	21
60+	6	8	1	19	0	0	0	0	3	10	0	0	2	15	4	6
All	53	10	7	34	3	5	7	7	21	19	4	3	11	8	42	10
Age-adj.*		10		27		5		7		17		3		8		10

* Age adjusted by the direct method to the total population of Hawaii, 1989.

significant differences between Caucasians and certain Asian ethnic groups (Chinese and Filipino) were observed, this difference in prevalence may not be a result of an increased risk for SLE but it could be from differences in medical care, diagnosis, and mortality.

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TABLE 4.–Prevalence Odds Ratio (POR) and 95% Confidence Interval for Demographic Variables in SLE Patients in Hawaii, 1989.

Variable	POR	95%CI
Sex (female/male)	7.5	5.6-9.9
Age (20-39yrs/<20yrs)	3.7	2.6-5.1
Age (40-59yrs/<20yrs)	5.2	3.7-7.3
Age (60 and over/<20yrs)	2.5	1.7-3.8
Ethnicity (Japanese/Caucasian)	1.3	1.0-1.7
Ethnicity (Filipino/Caucasian)	1.5	1.1-2.0
Ethnicity (Chinese/Caucasian)	2.4	1.7-3.4
Ethnicity (Hawaiian/Caucasian)	0.8	0.6-1.1
Ethnicity (Non-Caucasian/Caucasian)	1.2	0.9-1.5

TABLE 5.–Comparison of Questionnaire Data for SLE Patients in Hawaii, 1989.

A.–Recruited through medical system
B.–Recruited through medical system and Lupus Foundation
C.–Recruited through Lupus Foundation only

	A	B	C
Number of cases	78	48	73
Mean age in 1989 (years)	38	34	48
Mean age at onset (years)	27	22	29
Mean age at diagnosis (years)	29	25	37
Oahu residents (%)	80	83	95
Proportion Caucasian (%)	6	17	37
Proportion Filipino (%)	18	17	4
Proportion Japanese (%)	38	25	23
Skin disease (%)	56	68	71
Kidney disease (%)	62	53	30
Joint disease (%)	91	81	80
Hospitalizations for SLE	3	2.5	1.6
Morbidity (days during last year)	58	46	46
Born in Hawaii (%)	83	69	63

TABLE 6.–Age-specific Death Rates for SLE in Hawaii, 1985 to 1989.

Rates are per million population per year.

Age	Caucasians		Non-Caucasians	
	No.	Rate	No.	Rate
0-19 years	0	0	3	2.1
20-39 years	1	1.9	10	8.1
40-59 years	1	3.8	8	9.6
60+ years	1	6.3	9	15.6
Total	3	2.4	30	7.5

Adequacy of a Pre-Participation Examination Form: A Study of Hawaii Physicians

Barton P. Buxton EdD, ATC*, Kwok W. Ho, PhD**, Andrew W. Nichols MD†, Michael R. McCarthy EdD††, PT, ATC, W. Douglas B. Hiller MD†††

Many states currently require a medical screening prior to participation in organized sports. The purpose of this study was to examine the adequacy of the existing pre-participation examination form in Hawaii. One hundred forty-eight physicians who perform school health/pre-participation physical examinations were surveyed. The results indirectly suggest that these physicians agreed that the form should be modified and improved (p, .001).

Introduction

It is generally believed that the pre-participation physical examination serves as a useful tool in the detection and prevention of unnecessary injury and illness in athletics.[1]

Goldberg et al[2] reported that 15% of the 701 student athletes evaluated during a pre-participation examination study had medical problems that warranted further evaluation or exclusion from sport participation. Among them, 9 students were prohibited from participation because of medical or orthopedic problems.

Pre-participation examinations are required for both scholastic and community-based sports programs in many states.[3] This practice becomes imperative with the continually increasing numbers of participants in organized athletic activity. In fact, current estimates of national participation in youth sports programs is in excess of 20 million.[4-5] Furthermore, more than half of the boys and a third of the girls at the high school level participate in organized athletic competition in various geographic areas.[3] In fact, in the small state of Hawaii, there are more than 21,000 high school athletes who are participating in organized high school athletics.

In 1988, a national survey was conducted to assess the requirements for high school pre-participation physical examinations.[3] The results of this study indicated that of the 45 states that replied, only 36 states have an official examination form and 35 states required a yearly examination. Among those 36 states that have an official examination form, only 25 included a medical history as part of the examination and only 3 of these 25 states list contraindications to participation. This study also showed that the High School Athletic Association of Hawaii requires a yearly pre-participation examination, has an official state form, has established examination guidelines, and requires a medical history as a part of the examination. However, in the Hawaii form, there were no criteria for exclusion from sports participation, such as hypertension, body fat content, heart murmur, etc.[3] Furthermore, it was unclear from this study whether the physicians administering these examinations were satisfied with the existing format and guidelines for screening the athletes for sports participation.

The purpose of this study was to examine the adequacy of the existing pre-participation examinations form and guidelines in the state of Hawaii.

Methods

Four hundred fifty physicians were randomly selected from the Hawaii Medical Association membership directory. According to their similarities in practice type, each of the physicians was categorized in one of the following groups: Pediatricians (PD, n=90), family and general practitioners (FP, n=90), internists (IM, n=180), orthopedic and general surgeons (OGS, n=45), and physical and emergency medicine physicians (EM, n=45).

A pamphlet-type survey was constructed to include a cover letter, the health examination form, and a questionnaire. The cover letter requested that the respondent review and evaluate the

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health examination form (Fig 1) and respond to the 9 questions concerning the form (Table 1). The health examination form was a copy of the health examination form currently being utilized in Hawaii for the pre-participation examination. The form was identified as a "suggested" health form to eliminate subject bias. Respondents also were asked if they currently are performing school health/pre-participation physical examinations. The overall return rate was 43% (193/450). However, among these 193 physicians, only 148 actually perform school health/pre-participation physical examinations. Therefore, only the data from these 148 subjects were analyzed; chi-square contingency tests were used for statistical data analysis, the alpha level was set at $P < .001$.

Results

The chi-square statistical analysis showed that there were significant differences in response for 5 out of 9 questions regarding the possible changes in the health examination form ($P < .001$) (Table 1). Although these physicians did not indicate that the form should be more comprehensive, they significantly indicated that certain portions of the examination should be expanded. Specifically, they suggested that the musculoskeletal examination and laboratory work should be expanded and the maturational status should be included in the examination. It is of interest that although these physicians agreed to have modifications of the existing pre-participation examination, they did not believe that the improved form would contribute to injury prevention or would decrease injury exposure ($P < .001$). With occasional minor differences of opinion, the response for each of the questions was very similar between physician groups. Table 1 shows the responses for each of the 9 questions between physician groups.

Discussion

The results of this simple survey support the findings of other previous studies in the literature.[1-3,6-7,9-11] The benefits of a complete and properly administered medical history are well established.[2,6-7] In fact, the American Academy of Pediatrics had developed a pre-participation physical examination form which included an extensive health history and interim health history.[8] As a result of a pre-participation examination study in Washington state, Smilkstein[9] in 1981 suggested that a pre-participation examination, which includes a medical history, a functional examination for the cardiovascular and respiratory systems, and a sports-specific physical examination be given to the athletes. In 1982 Harvey[10] also concluded that the pre-participation examination could be a useful tool in injury prevention if performed by a primary care physician and complemented with a cardiovascular and musculoskeletal fitness assessment. In 1985, McKeag[1] summarized that the essential components of a pre-participation examination should include a complete medical history, a thorough physical examination completed with a musculoskeletal, cardiovascular and psychological component, laboratory testing, and a maturation status. Feinstien et al[13] also recommended that the pre-participation examination should focus on the cardiovascular and musculoskeletal systems following a complete medical history and that the examination contain an assessment of physical maturity and be applicable to both genders.

The responding physicians in this study agreed that the musculoskeletal portion of the examination should be expanded ($p < 0.001$). This is congruous with the findings and recommendations of previous authors which suggest that assessment of joint laxity, range of motion and strength assessment be included in the pre-participation examination.[1-3,6,9,11] The physicians also noted that laboratory work needed to be expanded. The laboratory work on the existing form contained only one line for urinalysis. Some studies[1,3,9] have concluded that the inclusion of blood work is an equally important aspect for screening for anemia and possible platelet disorders in certain populations. Maturational assessment also was suggested to be included in the examination portion of the present study. This assessment would allow the physician to properly advise the participants as to the type and level of sports activity (weightlifting, collision/contact, or endurance) that may be suitable for the individual participant's level of maturity.[1,3]

The results of this study further show that although these physicians agreed that modifications are needed for the existing pre-participation examination, they did not believe that an improved form would make significant contributions to injury prevention and/or decrease injury exposure. These data suggest

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Table 1.—The Number of Responses for Each Question from the Physicians who were Performing School Health/Pre-Participation Physical Examinations

Question		Total Response n=148	Physician by Group PD n=42	FP n=37	IM n=57	OGS n=6	EM n=6
1. Should history be expanded?	Yes	75	23	20	24	3	5
	No	73	19	17	33	3	1
2. Could form be better organized?	Yes	72	28	16	21	2	5
	No	76	14	21	36	4	1
3. Should exam be more comprehensive?	Yes	63	21	19	16	3	4
	No	85	21	18	41	3	2
4. Should general exam be expanded?	Yes	115*	33	27	50	3	2
	No	33	9	10	7	3	4
5. Should musculoskeletal exam be expanded?	Yes	133*	38	32	54	5	4
	No	15	4	5	3	1	2
6. Should lab work be expanded?	Yes	106*	27	27	48	3	1
	No	42	15	10	9	3	5
7. Should maturational status be added?	Yes	122*	34	31	50	4	3
	No	26	8	6	7	2	3
8. Would an improved form decrease injury exposure?	Yes	73	27	16	23	4	3
	No	75	15	21	34	2	3
9. Would an improved form increase injury prevention?	Yes	43	17	11	8	4	3
	No	105*	25	26	49	2	3

PD=Pediatrician, FP=Family Practice, IM=Internal Medicine, OGS=Orthopedic and General Surgery, EM=Emergency Medicine.
*Chi-square contingency tests significant difference at 0.001 level.

Characteristics of Long-Term Mentally Ill Patients: Policy Implications

Robert L. Anders, DrPH, RN, CNAA*

This study examined the records of all psychiatric patients who were hospitalized over one year in a public sector institution. The 88 patients primarily were men, hospitalized under a penal code, Hawaiian or other ethnic minority, and unmarried. Over 74% were hospitalized under a penal code. The State is moving toward a capitated managed care environment for the seriously and persistently mentally ill. With the majority of the patients who are hospitalized under a penal code, changes in the public policy concerning their care is needed. If no changes are made, all of the existing hospital beds potentially could be filled with forensic patients.

The rising cost of health care is a national concern. Patients with serious and persistent mental disorders contribute significantly to this increase, they frequently are hospitalized over an extended period of time, and account for more than 40% of the cost of mental health care.[1]

The chief of Adult Mental Health Services reports the average cost of hospitalizing a patient at Hawaii State Hospital, the public sector facility, is approximately $500 a day. At the time of this report, 88 individuals hospitalized at this psychiatric facility had a length of stay exceeding one year. According to Sherry Harrison, the annual cost to provide basic services for these patients is approximately $16 million or $182,500 ($500 x 365 days) per person. It can be argued that this is a cost-effective rate as compared to the average-daily cost in the private sector of approximately $1,000. However, a large portion of these patients could be placed in non-hospital settings.

To understand more clearly the factors that contribute to the length of stay, a variety of issues need to be examined. Barber et al[2] studied the clinical and demographic characteristics of 203 chronic inpatients at Western State Hospital in Staunton, Virginia. The most significant findings were: 1) the majority of the patients had a diagnosis of schizophrenia or organic mental disorder; 2) 32% of these patients had a violent episode 6 months prior to the conclusion of the study; 3) there was a prevalence of neurological abnormalities such as abnormal EEG, seizures, and a history of a head injury; 4) 62% of these patients were hospitalized either involuntarily or through a plea of *Not guilty by reason of insanity*.

Bigelow et al[3] studied the characteristics of hard-to-place state hospital patients. In their patient sample of 146, 62% were assaultive, 32% had a history of starting fires, and 80% had little or no self-care skills. Loud outbursts were a problem behavior for 62% of the patients.

After a 10-year follow-up study of a cohort of patients from Cambridge-Somerville Hospital in Cambridge, Massachusetts, in 1977 to 1987, an investigation by Dorwart[4] found what appears to be an increasing number of involuntarily committed patients who are at risk of harming themselves. Sixty-five percent of the patients in his review were involuntarily committed and 48% were assaultive. Ten percent of the patients were 65 years of age or older, 30% had medical co-morbidities, and 25% needed assistance with activities of daily living.

Similarly, Gottheil et al[5] assessed characteristics of long-term patients in 1981 and 1986 and found the proportion of patients hospitalized more than 5 years decreased, as did the overall hospital census. Also reported was an increase in the number of non-voluntary patients and a larger mix of older, disabled, and unemployed patients.

In a 1992 study, Soni et al[6] examined the differences between chronic schizophrenic patients in community and hospital settings. Hospitalized patients had a higher incidence of negative symptoms (primarily flattened affect and poverty of speech) and severe thought disorders as compared to those living in the community. They found the community patients received higher doses of neuroleptic drugs and, as a result, had a higher incidence of extra-pyramidal side effects.

The changing characteristics of schizophrenic patients admitted to state hospitals between 1970 and 1986 indicated that the number of African-American men increased in proportion to the other ethnic groups.[7]

These patients relied on either Medicare or their own funds to pay for the cost of services and were more likely to be indigent.

The majority of long-term patients tend to be diagnosed as schizophrenic, have a history of assaults, are a member of a minority group, and were hospitalized under a penal code charge. The purpose of this study is to compare the characteristics and demographics of the long-term patients identified in the literature with those surveyed in Hawaii and to discuss the implications of this comparison.

Methods

This study was conducted at Hawaii State Hospital, a 187-bed, public sector psychiatric facility serving the entire state. The average daily census at the time of this study was 178. Patients are located on 7 different nursing units. Three of the units are primarily for forensic patients, with the remaining units providing care for acute, cognitively impaired, older adults, and those patients needing biopsychosocial rehabilitation. Children or adolescents are not hospitalized at this institution.

Using the variables and criteria as identified from Barber et al,[2] all patients hospitalized more than one year as of January 1, 1993

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were included in the study. Using a survey tool adapted from their study, a registered nurse reviewed the records of 10 long-term patients and determined that the required information could be retrieved. She then reviewed the records of all patients eligible for inclusion in the study. Forty-nine percent, or 88 of the inpatients met this criteria (Table 1).

The demographic data were analyzed using descriptive statistics and a two-tailed, unpaired statistic to compare group means of age, years since onset of illness, years of hospitalization, educational level, marital status, ethnicity, and legal status. Comparisons were made between gender, ethnicity, type of legal status, age, history of violence, abnormal EEG, history of head injury, and Axis I and nursing diagnosis employing chi square statistics.

Results

The patient population was comprised primarily of men, hospitalized under a penal code, of Hawaiian or other ethnic minority, and unmarried. The average length of hospitalization was 5.2 years with a standard deviation of 4.1 years (Table 1).

Legal Status

Voluntary patients comprised 18.2% of the group with 4.5% who had been civilly committed. More than 74% of the patients had been hospitalized under a penal code (Table 1). Men represented some 86.4% (df=1, p=.001).

Ethnic Mix

The ethnic category was reported by the patient using the *State of Hawaii Data Book*[8] as a guide. The patients were classified into one of the 5 largest ethnic groups in the state or into the *Other* category.

In the study population, the ethnic mix for Hawaiians, Caucasians and the Other category was significantly different from that found in the general population (df=5, p=.05). Caucasians were underrepresented at 15.9%, while according to *The State of Hawaii Data Book* they comprise 33.4% of the population. Hawaiians were 20.5% of the patients and only 12.5% of the general population. The other ethnic groups were collapsed into one group because of small cell sizes. In this group were 3 African-Americans, 1 Laotian, 1 person of mixed ethnicity, 5 Portuguese, 3 Puerto Ricans, 5 Samoans, 1 Tongan, and 1 Vietnamese.

DSM-III-R

The DSM–III–R Axis I diagnosis is illustrated in Table 2. A schizophrenic diagnosis was found in 67% of the patients. Of this diagnostic classification, the most frequent grouping was chronic paranoid (17%), followed by schizoaffective (14.8%), chronic undifferentiated (13.6%) and (10.2%) paranoid type. Only 10% had an organic diagnosis; 5.7% an Axis I diagnosis of substance abuse. Four patients had no Axis I diagnosis. Using a chi square analysis, no significance was found between Axis I diagnoses and ethnicity.

Twenty-eight percent of the patients had 2 Axis I diagnoses and 6% had 3. The most common second Axis I diagnosis was substance abuse, accounting for 13% of the patients.

An Axis II diagnosis was determined in 34% of the patients. The most common diagnosis was personality disorder and encompassed 17% of the patients. Mental retardation followed with 10.2% of the group.

Thirty-four different medical diagnoses comprised the Axis III classification. Sixty-one percent of the patients had no Axis III diagnosis. The most common diagnosis was essential hypertension for 6.8% of the patients and diabetes mellitus and acne, both with 3.4% of the population studied.

Nursing Diagnosis

Thirteen different nursing diagnoses were found for 92% of the patients (Table 3). Eight percent had no nursing diagnosis.

When comparing the nursing diagnosis with the most frequent Axis I diagnosis, schizophrenia, 23.8% had a nursing diagnosis of ineffective individual coping and 28.4% had a nursing diagnosis of alteration in thought process. These findings were marginally significant (d=39, p=.059). The other Axis I diagnoses were not significant when compared to the nursing diagnosis.

Table 1.—Demographic Characteristics

	Both N=88	Men N=76 (86.4%)	Women N=12 (13.8%)
Mean age	39.2	39.1	43.8
Mean years ill	17.2	17.3	19.5
Mean years this hospitalization	5.2	5.5	3.3
Mean years education	11.6	10.4	11.1
Married-past or present	26%	24%	25%
Civil code			
Voluntary	18.2%	13.6%	4.5%
Civil commit	4.5%	3.4%	1.1%
Penal Code			
Unfit to Proceed	3.4%	3.4%	0%
Acquit/Commit	54.5%	51.0%	3.4%
Acquit/Commit until clin discharged	3.4%	2.2%	1.1%
Revocation of condition release	12.5%	9.0%	3.4%
Other	3.4%	3.4%	0%
Ethnicity			
Caucasian	15.9%	14.7%	1.1%
Chinese	3.4%	1.1%	2.2%
Filipino	12.5%	11.3%	1.1%
Hawaiian	20.5%	17.0%	3.4%
Japanese	19.3%	13.6%	5.6%
Other	28.4%	28.4%	0%

Table 2.—Axis I Diagnosis N=88

Schizophrenia	73%
Affective disorders	10%
Organic disorders	8%
Other psychosis	1%
Mental retardation	0%
Substance abuse	20%
No diagnosis	5%
Noncompliant med treatment	3%

Total exceeds 100% as some patients have more than one Axis I diagnosis.

Benefit Status

Eighty-three percent of the patients received some type of state or federal assistance: 17% benefited from the Medicare or Medicaid program; 17% received no government funds from Medicare or Medicaid.

Clinical Features

Eighty-three percent of the patients had no history of physical violence; 12 patients, or 13.6%, had been violent during the past 6 months. Sixty-four percent, however, did have a history of violence during their hospitalization. Men were more likely to have been violent, 59% versus 5.7% for women (df=3, p= .045). There was no significance between the legal status and a history of violence during the previous 6 months or during the entire hospitalization.

Medications

Seventeen different psychotropic medications were administered to the long-term patients. For schizophrenic patients the most frequently prescribed medication was clozapine (14.8%), haloperidol decanoate (9.1%), and thiothixene (6.8%) (df=51, p=.003). No medications were prescribed for 12.5% of the patients. One percent of the affective-disorder patients received haloperidol, 3.4% were given lithium carbonate, and 2.3% were administered chlorpromazine. A second drug was administered to 51.1 % of the patients, 21.6% received 3 drugs, and 5.7% were given 4 drugs. The most common second drug was divalproex sodium at 10.2%, and benztropine mesylate at 9.1%. The third most commonly prescribed drug was benztropine mesylate at 4.5%, and divalproex sodium at 3.4%.

Reason for Hospitalization

The most common reason for hospitalization was "Not guilty by reason of insanity" (Table 4). More than 73% of the subjects were in this category. Only 14.8% were clinically unstable or unable to care for themselves in a less-restrictive environment. "No housing options" was a problem for 13.6% of the patients. Eight percent were a danger to themselves or others.

Discussion

Patients hospitalized more than one year account for 49% of the total hospital census. Many of the patient characteristics found in this study correspond with findings in the literature: 62% of patients had a diagnosis of schizophrenia, 92% had a history of violence during their hospitalization, and 24% had an organic diagnosis.[2] In this study 73% were schizophrenic, 64% had a history of violence, and only 8% had organic diagnosis. Fewer than 13.6% of the patients had been violent in the past 6 months. These findings contrast sharply with those reported by Barber et al[2] who found a higher incidence in all of these areas.

Why are the patients in this sample apparently less violent and exhibiting fewer organic diagnoses? The first explanation is perhaps that conditions are under-diagnosed. A second possibility may be, with 74% of the long-term patients committed under a penal code, that they are now stable, but because of their legal status have not been discharged. In this study, a higher percentage of patients were involuntarily hospitalized under a penal code than those reported by Barber et al[2] and Dorwart.[4] Of their subjects, 63% to 65%, respectively, were forensic patients.

Nursing diagnosis was marginally significant when compared to the various Axis I diagnoses. These preliminary findings suggest that a more intensive evaluation of nursing diagnosis and their correlation to the Axis I diagnosis is warranted. Less than 55% of the schizophrenic patients had a nursing diagnosis of ineffective individual coping or alteration in thought process, which typically describes the nursing problems this diagnosis represents.

There could be a number of issues that contributed to this finding: 1) the registered nurses might have been unfamiliar with the diagnoses, 2) the patients did not exhibit the behaviors described by the diagnoses, or 3) the nurses' assessments did not lead to an accurate nursing diagnosis. Further research is needed to clarify these questions.

An increasing number of minorities who have been hospitalized as reported by Thompson et al[7] was also found in this study. Overrepresented in the patient population were Hawaiians and a variety of smaller ethnic minorities. Caucasians were underrepresented. This study seems to confirm the continuing trend that ethnic minorities are increasingly overrepresented in state hospital populations. Also the high number who are indigent seems to corroborate that these growing numbers of minority patients have limited resources.

The lack of a significant number of Axis III diagnoses was surprising. Perhaps the medical problems of the chronic psychiatric patients are frequently under-assessed. To address this problem Hawaii State Hospital has contracted with the University of Hawaii's Schools of Nursing and Medicine to provide a nurse practitioner and a board-certified internist to upgrade the level of medical care. Working collaboratively with the existing medical staff, they are responsible for both coordinating and providing medical services.

Perhaps the most significant finding of this study was that 74%

Table 3.—Primary Nursing Diagnosis N=88

Communication impaired	2.3%
Coping, ineffective individual	23.9%
Health maintenance	3.4%
Injury, high risk	1.1%
Knowledge deficit	1.1%
Nutrition altered	2.3%
Self-care deficit	2.3%
Sensory perceptual alteration	3.4%
Social interaction, impaired	10.2%
Social isolation	2.3%
Thought process altered	28.4%
Violence, high risk	9.1%
Other	8.0%
None	2.3%

Table 4.—Reasons Why Patients Still in Hospital N=88

Clinically unstable	14.8%
Unable to care for self in less restrictive environment	14.8%
No housing options	13.6%
Decompensates with discharge planning	2.3%
Dangerous to self or others	8.0%
Noncompliant with meds	5.7%
Not guilty by reason of insanity	70.4%

Total exceeds 100% as some patients have more than one reason.

of the patients were hospitalized under a penal code. Theoretically this means, given the present growth in the forensic population, these patients could eventually take all of the available beds in the state. It is entirely possible that in the near future the voluntary and civilly committed patients could find "no room at the inn."

The State of Hawaii will eventually need to develop alternative plans to manage this group of patients. One consideration could be the establishment of supervised group homes and intermediate care facilities for the nonviolent patients who are now stable. Only 13.6% of the patients had been violent during the past 6 months. Approximately 36% of the patients were either clinically unstable, unable to care for themselves in a less-restrictive environment, or dangerous to self or others. For these patients, continued hospitalization is probably warranted. However, for patients who needed housing, were noncompliant with medications, or were patients only because of the "Not guilty by reason of insanity" plea, potentially they could be managed outside of the hospital setting.

One of the major public concerns is the safety of the community when forensic patients are placed off hospital grounds. There seems to be a myth that if patients are in a hospital then the public's interests are protected. As forensic experts acknowledge, most patients have committed nonviolent crimes and probably pose no danger to themselves or others at the time of commitment.

A variety of instruments and/or protocols have been proposed to assess when forensic patients can be placed safely in the community. Some agencies use the Minnesota Multiphasic Personality Inventory and Rorschach tests in predicting dangerousness. But there is no clear consensus regarding their usefulness in predicting readiness for community placement.[10] An instrument developed at Patton State Hospital, California, measures a forensic patient's readiness for community outpatient treatment. The scale measures 15 different items, as such illness, behavior, substance abuse, and future plans. The validity and reliability of the instrument is not reported. Maier et al[1] discuss a variety of security safeguards used at the Mendota Mental Health Institute in Madison, Wisconsin, to determine if forensic patients are appropriate for community placement. Their tool has been in use for 7 years and the scale has proven reliable. They use such interventions as a 3-month community orientation, release-planning groups, buddy systems, and security sign-in/sign-out to facilitate the transition.

Perhaps safeguards that use such assessment instruments and protocols would facilitate the appropriate discharge from the hospital into the community. A safer approach, at least from the public's perspective, would be transferring patients from the hospital into either a group home or intermediate care facility.

The cost for maintaining a patient in a group home is estimated to be approximately $70 a day or $2,100 a month. As mentioned previously the cost to hospitalize 1 patient is estimated to be $15,000 a month. If only 30 of the current long-term patients could be discharged to a group home, the savings would be significant. A monthly savings of $387,000 is achievable; the annual savings could exceed $4.6 million. Even if the estimate is high and only 20 patients could be managed in a group setting, the savings would still be $258,000 a month.

If the patient requires a higher level of skilled nursing, an intermediate care facility might be appropriate. These units generally have a higher staff-to-patient ratio than a group home, and thus are able to provide a higher standard of care and more protection for the community. It appears a significant number of long-term care patients from this study could be transferred to such a facility. The cost to operate a unit would be substantially below those of a hospital.

A major obstacle to facilitating these types of moves are the acquit and commit statutes. In Hawaii, the patient may petition the court annually for conditional release. The courts, for a variety of reasons, have been extremely hesitant to release patients once they have been acquitted and committed to the custody of the Director of Health for treatment. Part of the concern lies with public misconceptions about the mentally ill, the high number of indigent minority groups, public defenders who have heavy case loads and seem reluctant to invest much time in these cases, and a State Attorney General's office whose role is not to advocate for patients but for the interests of the State.

Hawaii statutes for the most part do not conform to the American Bar Association's criminal mental health standards. If the state legislators and the governor enacted into law the major standards recommended by the American Bar Association,[12] many of the inconsistencies might be resolved. The public officials responsible for managing the criminally insane might want to jointly collaborate in drafting model legislation to address the shortcomings in the Hawaii statutes.

The State of Hawaii, in July 1993, received a waiver from the Health Care Financing Administration to combine its Medicaid and other general entitlements into a managed care program called QUEST.[13] This program provides 13 days of inpatient psychiatric care and 12 outpatient visits per year for acute services. In 1994, the State will develop a separate, fully capitated, managed mental health program for the seriously disturbed mentally ill, the chronic alcohol and substance abuse patients. This means, potentially, there will be a fixed amount of funds available to care for this population.

It is unclear how the State hospital will operate under such a system. It is possible the State or a private vendor will be given a fixed capitated rate to manage these patients. It seems certain the resources will be limited. It is also apparent from both the literature review and the findings of this study, the forensic population will continue to grow. The State must manage these patients in a cost-effective manner.

With our health-care resources becoming more precious, administrators will need to examine existing delivery models to ensure they provide quality outcomes and are cost-effective. Many challenges face the mental health delivery system and they require innovative solutions. Managing the growing forensic patient population is one of the main challenges as identified in this study.

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Pre-Participation Examination

➤ *Continued from Page 411*

that injury prevention is a very complicated problem and the pre-participation examination plays the role of providing valuable information for further decision-making. Additional efforts, athlete and parent education, coaching education, and conditioning, are desperately needed to provide a safe environment for youth athletic participation.

Several national medical associations, such as the American Academy of Pediatrics, the American Academy of Family Practice, the American Medical Society for Sports Medicine, and the American Orthopedic Society for Sports Medicine have developed their own more comprehensive and thorough pre-participation examination forms. The results of this study suggest that it might be time for other states that require school health/pre-participation physical examinations to re-evaluate the adequacy of their existing forms in order to provide better screening of student-athletes for sports activity. Furthermore, the results of this study, along with specific recommendations, have been presented to the Hawaii High School Athletic Association to better facilitate the screening of the high school student athletes within the state. It is hoped that a more complete and useful pre-participation examination form can be developed and used in the near future.

The major findings of this study suggest that the pre-participation physical examination form and guidelines, currently used in the state of Hawaii, could be improved to provide a complete and thorough screening of athletes for sports activity. The findings of the pre-participation history and physical examination may be used to reduce the risks of various athletic-related injuries by following existing "recommendations" for participation in competitive sports, such as those established by the American Academy of Pediatrics Committee on Sports Medicine.[12] Therefore, the examination should include a complete medical health history, a general physical assessment with basic cardiovascular examination, a complete musculoskeletal evaluation, more comprehensive laboratory work, and a maturational evaluation. Further, the examiner should be prepared to make a functional evaluation as to the athlete's physical ability to participate in certain sports. Finally, all athletes and parents should be counseled as to any predisposing risks of injury that have been discovered during the examination process.

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Fig 1.—Suggested Health Examination Form

(Cooperatively prepared by the National Federation of State High School Associations and the Committee on Medical Aspects of Sports of the American Medical Association.) Health examination for athletes should be rendered after August 1 preceding school year concerned.

(Please print) Name of Student City and School

Grade _____ Age _____ Height _____ Weight _____ Blood Pressure _____

Significant Past Illness or Injury _____

Eyes _____ R20/___ ;L20/___ ; Ears _____ Hearing R___/15; L___/15

Respiratory _____

Cardiovascular _____

Liver _____ Spleen _____ Hernia _____

Musculoskeletal _____ Skin _____

Neurological _____ Genitalia _____

Laboratory: Urinalysis _____ Other: _____

Comments _____

Completed Immunizations: Polio _____ Tetanus _____

Date Date

"I certify that I have on this date examined this student and that, on the basis of the examination requested by the school authorities and the student's medical history as furnished to me, I have found no reason which would make it medically inadvisable for this student to compete in supervised athletic activities, EXCEPT THOSE CROSSED OUT BELOW."

Baseball	**Football**	**Rowing**	**Softball**	**Track**
Basketball	**Hockey**	**Skating**	**Speedball**	**Volleyball**
Cross Country	**Golf**	**Skiing**	**Swimming**	***Wrestling**
Field Hockey	**Gymnastics**	**Soccer**	**Tennis**	**Others**

*Estimate Desirable weight level _____ Pounds

Date of Examination: _____ Signed: _____

Examining Physician

Physician's Address _____ Telephone _____

Student Participation And Parental Approval Form

Name of student: _____ Name of School: _____

First Last Middle Initial

Date: _____ Date of Birth: _____ Place of Birth: _____

Health and Accident Insurance Carrier: _____

This application to compete in interscholastic athletics for the above high school is entirely voluntary on my part and is made with the understanding that I have not violated any of the eligibility rules and regulations of the State Association.

Signature of Student: _____

Parent's or Guardian's Permission

"I hereby give my consent for the above named student (1) to represent his school in athletic activities except those crossed out on this form by the examining physician, providing that such athletic activities are approved by the State Association; (2) to accompany any school team of which he is a member on any of it's local or out-of-town trips. I authorize the school to obtain, through a physician of its own course, any emergency medical care that may become reasonably necessary for the student in the course of such athletic activities or such travel. I also agree not to hold the school or anyone acting in its behalf responsible for any injury occurring to the above named student in the course of such athletic activities or such travel."

Signature of Parent or Guardian _____

Date: _____ Address: _____

(Street) (City) (Zip)

Note: This form is to be filled out completely and filed in the office of the high school principal or superintendent of schools before student is allowed to practice and/or compete.

Classified Notices

To place a classified notice:
HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Services

Experiencing a high-turnover with your billing personnel? Pathfinder Business Services offers an in-house medical billing service at reasonable rates. Free consultation. Call 625-1085.
Medical Billing Services. EMC claim processing, patient statements. We pick up and deliver accurate work. Call for rates: Med Con, 236-0285.

Position Available

BC/BE Emergency Medicine physicians needed for on-call positions at $80 an hour. Contact Monte Elias MD at 522-3781 or Ellen Sakai, Physician Recruitment Coordinator, at 522-3006. Mail CVs to: Straub Clinic & Hospital, Physician Recruitment, 888 S King Street, Honolulu HI 96813. Fax (808) 522-4113.
Family Physician.—Looking for experienced family physician to work in beautiful Kohala. Immediate opening. (808) 889-6236.

Office Space

Sports medicine and orthopedic surgical practice.—Willing to share office space at Queen's POB 1 and Pali Momi POB. Complete staff, managerial system, radiology, and physical therapy svcs available. Call Diane Fong, 536-4992, M-W-F or 487-7231 T-Th.
Medical Arts Bldg.—250 sq ft to 997 sq ft of office space available. Med svcs on site. Contact Char Shiroma or Crissy Young, 524-2666.

Locum Tenens

Radiologist, semi-retired on Maui, available to cover on any island; please call (800) 784-MAUI or (808) 875-9794.

Long-term Mentally Ill Patients

➤ *Continued from Page 415*

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President's Message

➤ *Continued from Page 403*

Lewin, the HMA Legislative Committee will be looking at commenting on a state version of the Patient Protection Act. Anyone wishing to comment should contact HMA staff or Dr Jack Lewin. Dr Lewin wants to ask every member of the HMA to become involved in this year's legislative process. You will be hearing from him shortly.

The HMA continues to work for you and all of medicine in Hawaii.

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News and Notes Henry N. Yokoyama MD

Medical Humor

Condensed excerpt from *Stitches*, October 1994.

Taylor's Twist by Patrick Taylor.—For the greater part of my professional life, I've been involved in the investigation and management of infertile patients. This was a source of great interest to my daughter Sarah when she was little. Shortly after Sarah started the first grade, I received an aggrieved phone call from a spinster lady of indeterminate age. She identified herself as my daughter's teacher.

" This is a very delicate matter, Dr Taylor."

I thought a noncommittal, "Um," was probably the safest reply, at least until I'd become better informed about the dire nature of my daughter's sins.

"Do you know what Sarah said today? Well, it was show and tell, and I asked the class to tell us what their parents did. Your daughter informed us proudly that 'My daddy makes ladies pregnant.'"

Life in These Parts

Aloha Medical Mission.—A mercy mission that began 11 years ago with 8 volunteers has grown exponentially under the apt leadership of **Ramon Sy**. This year 400 volunteers returned in December from a month-long trip to Vietnam and the Philippines. Seven hundred surgeries were performed and more than $700,000 in medical supplies were donated to local health officials. Ramon says modestly, "We hope that we can continue doing work of this nature, not only for our own people and the homeless, but for the people of the Third World countries of Southeast Asia and the Pacific as well."

Ombudsman for QUEST.—Representative **Dennis Arakaki** plans to create an ombudsman for the QUEST program because the patients have no means to voice their concerns. More than 50,000 people (10,000 more than anticipated) had signed-up and the State might need more money to accommodate the extra patients. Dennis is optimistic, "I think the program is gonna work. It's probably gonna save the State money."

Our New Health Director.—Larry Miike, 54, who was appointed Hawaii Health Director by Governor Ben Cayetano, has fascinating qualifications. Larry was born in Damon Tract and was Ben's classmate in the 7th and 8th grades at Kalakaua Intermediate. He graduated from Amherst College in 1962, finished UC Medical School in 1966, and UC Law School in 1972. He was a senior associate for the Office of Technology Assessment in Washington, DC for 12 years and "has a national and international reputation in federal policy and is known to be progressive." Before being tapped for the Health Director position, Larry was U of Hawaii family practice and community health professor, president of Planned Parenthood, and medical director of the State's Health QUEST Program.

Larry says, "Ben and I are real similar. What you hear from me is what you're going to get."

QUEST administrator **Winnie Odo** says, "He brings an ability to motivate people. That is a tremendous administrative skill."

Phil Hellreich, spokesman for the Hawaii Federation of Physicians and Dentists, faults Larry for his role in Health QUEST, but HMA **President Fred Holschuh** says, "He is willing to listen to our side." (Sounds like a no nonsense kind of guy.)

Families USA, a national, nonprofit consumer group that focuses on health care, reports that the Republican-sponsored spending and tax cuts would cause Hawaii residents to lose nearly $300 million a year in aid from 3 federal programs. This translates to Medicare payments being cut by $265 million, veterans benefits by 16 million, and student loans by $1 million viz Hawaii residents will receive a paltry $933 million in Medicare payments, $57 million in veterans benefits, and $3.5 million in student loans.

Miscellany

Tom, the fullback, was declared ineligible to play unless he passed a makeup math test. The coach, who has been there, too, call the math prof and they agreed to meet in the math classroom. The prof wrote, "8 + 8 = ?" on the blackboard. Tom pondered the problem carefully, counted his fingers, and finally answered, "16?" The coach immediately jumped up and pleaded, "Aw, come on, teach! Give him another chance!"

(As told by Clay Benham, our favorite tennis coach.)

The elephant looked disdainfully at the naked man and asked, "How can you breathe through that little thing?"

(As told by internist GM)

Physician Moves

November: ENT and general surgeon **Donald W.S. Yim** joined **Hideo Oshio** at KMP Suite 715, and also has a Kailua office in the Professional Center Building, Suite 302B, and a Kaneohe office at Bank of America Building, Suite 405. Ophthalmologist **Susan Senft** joined **John Corboy**'s Hawaiian Eye Center office at 75-240 Nani Kailua Drive, Kailua Kona.

December: **Peter Diamond** (formerly with Honolulu Medical Group) joined **Chet Nierenberg** and **Bob Smith** in their Honolulu Sports Medical Clinic at 932 Ward Avenue, Suite 460.

Pediatrician **Michael Sia** took over **Ross Hagino**'s practice at 2080 S King Street, Suite 101.

January: OB/gyn **Linda M. Waki Ho** opened her office at Kapiolani Medical Center Physician Office Building, Suite 520.

Nephrologist **Ramona L. Wong** opened her offices at Queen's POB 1, Suite 800 and Kuakini Medical Plaza, Suite 407.

Cardiologists **Neal Shikuma** and **Stanley Kawanishi** opened another office at Kapiolani Medical Center-Pali Momi, Suite 360. They have offices at Kuakini Medical Plaza, Suite 801, and at St Francis West Medical Office Building, Suite 307.

Elected, Appointed, and Honored

HMA Physician of the Year.—Personable Straub oncologist **Reginald Ho** was chosen the 1994 HMA Physician of the Year. Reggie was the 1993 President of the national American Cancer Society after serving 27 years with the American Cancer Society Hawaii Pacific Division, and 10 years with the national society's 212-member board. Reggie wears many hats—he is board-certified in internal medicine, a clinical professor of medicine at the John A. Burns School of Medicine, a clinical adjunct professor at the Cancer Research Center of Hawaii, an attending physician in internal medicine, hematology, and oncology at Straub, and chief of the department of oncology and hematology at Straub Clinic & Hospital. And to top it all, his son, Reggie Jr, won honors as a place-kicker for Notre Dame.

The Organ Donor Center of Hawaii announced the following physician officers for 1995: Secretary **Livingston Wong**, board members **Diane Johnson, Steven Komura, Whitney Limm, Steven Moser,** and **William Obana.**

National News

The annual survey by the Association of American Medical Colleges shows more graduates interested in primary care viz 23% in 1994 versus 14.6% in 1992. (The highest was the 34% in 1983) Donald Kassenbaum, who does the survey, says the current surplus of specialists and solo specialists is a "significant driver" of health care costs. Donald feels that the nation will be better served if more graduates went into primary care esp with the growth of managed care and the need for primary care physicians in underserved areas.

To Drink or Not to Drink

Earlier studies have shown that HDL levels rise with alcohol and now a new study shows alcohol consumption is directly related to higher t-PA levels. Harvard cardiologist Paul Ridker, the chief researcher, is reluctant to recommend patients to drink. Paul says, "What would be really exciting, would be to find a way to stimulate t-PA production without the side effects of alcohol." The study of 691 physicians has found a direct link between alcohol consumption and t-PA levels. Specifically, the highest level was in those who had two or more drinks per day; the T-PA levels declined progressively in people who had 1 to 6 drinks a

weeks; those who had 1 to 3 drinks a month and last, nondrinkers.

Sportsmen

Amiable, soft-spoken pediatrician **Roy Kuboyama** was 1 of 4 inducted into the University of Hawaii Sports Circle of Honor. Roy was the 1952 NCAA 112-lb boxing champ. More recently another Kuboyama made sports history. Clint, Roy's son, was the outstanding wide receiver for the 1994 UH Rainbows.

Hors de Combat

The Great Diaper Fraud.—Health and Human Service Inspector General June Gibbs Brown announced on December 13 that Medicare spending for incontinence-care kits had doubled over the past 3 years while the number of patients using the supplies had declined by 20,000. Aha! Something was not right. Government investigators found that in Florida medical suppliers have been overcharging and fraudulently billing Medicare for tens of millions of dollars worth of diapers and other incontinence supplies, eg, Medicare was being billed $7.39 for adult diapers for women that cost 26 cents, and $1.92 for a 7-cent tube of lubricant.

Crash Dummies.—"The federal government uses crash dummies to study injuries when passengers are thrown from pickup-truck beds.

In Hawaii, we are still using real people," says Walter Wright, staff writer for the *Honolulu Advertiser.*

In our state, anyone, including infants may legally ride in the back of an open pick-up as long as the cab is full. Each year, an average of 4 people (3 of them under age 19) are hospitalized for truck-bed accident injuries. To date, legislators have been unable to introduce bills to ban riding in truck beds. The foes argue that some families can afford only a pick-up to haul their kids around esp in rural Neighbor Island areas.

A Playboy Party Joke

Scott showed little aptitude for the law, and even less for public speaking. But neither handicap prevented him from pursuing a career as a defense attorney. Finally the day came for him to argue his first capital murder case, and he asked a colleague in his firm to attend the trial.

Halfway through his closing argument, Scott sent a note to the attorney, "What are the chances of my client being acquitted?"

"Keep talking," the response read. "The longer you talk, the longer he lives."

(From *Playboy Magazine*, November 1994)

Campus Comedy.—At a reception during our son's graduation from DePaul University, we met the Rev John P. Minoque, the University President. During our conversation, we learned that he had taught obstetrics and gynecology before being named president. When my wife expressed surprise, the Reverend replied, "I like to think that I've crossed over from labor to management."

(Thomas DeBeaudry, *Reader's Digest*, December 1994)

Medical Tidbits

Smoking Makes You Feel Older.—Heidi Nelson, Assistant Professor at Oregon Health Sciences School of Medicine, reports that of 9,704 white women over age 65 tested, smokers performed poorly against nonsmokers in basic tasks such as gripping, walking, and climbing stairs (ie, in muscle strength, agility, and balance). Similar tests also showed that moderate drinkers performed better than nondrinkers.

Strong Taste Doesn't Mean More Caffeine.—A standard 2 oz serving of expresso or cappuccino has 100 mg of caffeine as compared to the 115 mg of caffeine in a 6 oz cup of *American* coffee. Cappuccino and expresso are made from *arabica* coffee beans which have a stronger taste but less caffeine than the *robusta* beans in American coffee.

(Mayo Clinic *Health Letter*, November 1993)

The Common Cold—Fact or Fantasy

Sir William Osler, the famous Canadian medical educator, once said, "There's only one way to treat the common cold—with contempt." That was 70 years ago, but little has changed. (More than 200 different viruses cause colds. Rhinoviruses account for 30% to 50% of adult colds.)

Cold Quiz

• Damp, cold or drafty weather causes colds.

False. Colds depend on human contact—not the weather.

• You're more likely to catch a cold in the winter than in summer.

True. Cold or bad weather brings people together indoors which leads to more person-to-person contact.

• You can easily catch a cold from people sneezing or coughing.

False. Coughing, talking, and sneezing don't send viral particles very far, and the particles contain only a small concentration of rhinoviruses.

• Thorough washing hands and disinfecting kitchen and bathroom counters give protection against transmitting rhinoviruses.

True. Rhinoviruses can live for hours on hands and survive on hard surfaces such as formica, wood and plastic.

• Take plenty of Vitamin C to prevent a cold or to keep it from getting worse.

False. Studies show that Vitamin C is of little help in preventing or curing colds.

• Chicken soup can help relieve cold symptoms.

True. Steaming hot, home-made chicken soup can help clear mucus particles from the nose. Removing nasal secretions that contain viruses and bacteria is part of your defense.

• You can "sweat out" a cold.

False. The only treatment is Tincture of time viz the 3 or 4 days needed by the body to develop antibodies that can destroy the virus causing your cold.

• Fatigue makes you susceptible to colds.

False. No proof.



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The Weathervane Russell T. Stodd MD

All you need in life is ignorance and confidence, then success is assured.

The Health Care Financing Administration continues to push the cataract payment and the coronary artery bypass surgery (CABG) projects. The stated purpose is to determine the negotiated package prices for the procedures compared with fee-for-service expense. The obvious contradiction in such funding is the same one in physician-managed HMOs: a different set of standards and ethics prevail. Under a packaged price or a capitated contract, minimum care must obviously override optimum patient considerations. Why should the cataract surgeon use the best technical devices, or an anesthesiologist, viscoelastic, or even adhesive drapes? And why not use the cheapest imported lens implant? Pressure is exerted on physicians to limit or not to perform certain procedures, which, in the absence of that economic pressure, the physician would regularly perform. At the December 1994 meeting of the AMA House of Delegates in Honolulu, Walter Kahn MD, delegate from New Jersey, placed a motion before the House stating that these so-called *Centers of Excellence* have no basis for such title, but should actually be called *Centers of Discounted Medical Care*. The Speaker of the House agreed with his evaluation, but refused to accept the motion. Who said, "Truth will prevail?"

The word meaningful, when used today, is nearly always meaningless.

A California surgeon performed a successful operation on a woman; two years later, he revealed that he suffered from AIDS, and two years after he went public, he died. Although the patient tested HIV-negative, she successfully sued the doctor's estate for "emotional distress" caused by her fear of developing the disease. The appellate court ruled that the case be reconsidered. The court stated that patient had no proof of exposure, and only the most speculative possibility of developing the disease.

An empty limousine pulled up and out stepped an HMO.

A recent issue of the *Wall Street Journal* revealed that HMOs have piled up huge profits in 1993 and 1994. The story continues telling how HMOs have squeezed hospitals and doctors to deliver discounted care. What should be obvious, even to the "sky-is-falling" physicians rushing to sign-up for capitated contracts, is that while medical expenditures are increasing, doctors' incomes are not. This redistribution of dollars has dealt tidy sums to "managers"; those smiling entrepreneurs who hold expensive seminars telling physicians how to "save" their practices by signing with their program. It is simple—just endorse on the dotted line, hold them harmless, and work for 70 cents on the dollar with your friendly health care organization. Guess where the other 30 cents is going? The *Wall Street Journal* knows. Never forget the law of managed competition—managed care sucks!

Everyone thinks of changing the world, but no one thinks of changing him/herself.

In a matter related to the above, insurance experts and medical leaders are increasingly uneasy about the impact of managed care on malpractice premiums. Premiums for primary care docs, internists, and family practitioners are rising faster than those of specialists. Gatekeepers are the newest targets. It is believed to be caused by the loss of the doctor/patient relationship, and the perceived failure to refer promptly, or the choice of medical treatment dictated by financial incentives. Sympathetic juries severely discipline that kind of behavior.

You must believe in government, in spite of our politicians.

The December 7, 1994 issue of the *Journal of the AMA* discusses the 25th amendment to the Constitution of the United States. After the troubling illnesses of Dwight D. Eisenhower while in office, and the assassination of John F. Kennedy, Congress acted on the deficiencies in the law. The present anxiety centers around the unresolved question of presidential disability: Woodrow Wilson was severely incapacitated by a stroke, Eisenhower had a critical heart attack as well as a CVA, Ronald Reagan was much closer to death with his gunshot wound than the public realized (A confused Secretary of State Alexander Haig wanted to be in charge). Moreover, recently the White House has become a target for aircraft, a knife wielder, as well as a random gunfire. Major problems would ensue with a presidential illness of depression or dementia. Affected persons often do not recognize their own problems with mood, memory, and cognition, and then who is to diagnose and make determinations as to the president's ability to perform his or her duties? The law states that the vice president and a majority of the cabinet will make the decision with the assistance of the president's personal physicians. Constitutional scholars, physicians, and many others have urged for a better way. Past President Jimmy Carter is prodding the medical community to take the leadership in awakening the public and politicians to the urgency of the problem.

The surest way to make a monkey of a man is to quote him.

In a private arbitration agreement, an expert witness representing the Kaiser Foundation stated that a teenager's death was not related to use of isoniazid. Later it was alleged that he had contributed details of the case to another physician's article on isoniazid-induced hepatitis deaths which was published three months before the expert's deposition. Yet the patient's family was prohibited from filing a suit claiming false testimony. The California Supreme Court said such witnesses enjoy the protection they would have in judicial or other proceedings authorized by law. Say again? In other words, a legally, carefully crafted lie cannot be challenged!

What this country needs is a lot less of all sorts of things.

Tylenol has now been statistically accused of contributing to kidney failure. Johnson & Johnson is fighting the report. Apparently the study found that patients with kidney failure were more likely to have taken large amounts of the pain reliever than others in the study.

Aloha and keep the faith—rts

Hawaii Medical Journal Instructions to Authors

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Submit scientific articles, essays, letters and other manuscripts *to Hawaii Medical Journal,* 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Manuscripts are reviewed by the editor the peer review panel, and other experts in the particular specialties. Please be aware that your article will be edited to comply with the AMA style, corrected for grammar, and recommendations made by the peer reviewer.

Please submit two copies on 8 1/2 x 11 bond paper and keep one for your files. It is recommended the article be submitted on a Macintosh or IBM-compatible ASCII 3-1/2-inch diskette with the manuscript. Submit only articles that have not been submitted elsewhere. If possible, use Times Roman font in 10 point size. Please do not underline and do not use full caps. Number pages consecutively beginning with the title page. Graphs, tables and figures must be sized by the author to 3 1/2 inches wide, which is the column size.

A cover should contain the name of the author with whom *HMJ* will correspond, include an address, phone number, fax number and pager if needed, along with a statement that the manuscript has been seen and approved by all authors.

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Please keep the title short, specific and catchy if possible. If the title submitted is too long, it will be edited. List first name, middle initial and last name of each author with highest academic degrees; name of department and institution to which the work should be attributed; name and address of author to whom requests for reprints will be addressed, or statement that reprints are not available; the source of support in the form of grants, equipment, drugs, or all of these.

Abstract

The second page of the manuscript should include an abstract no longer than 60 words that highlights for the reader the essence of the authors' work. It should focus on facts rather than descriptions and should emphasize the importance of the findings and briefly list the approach used for gathering data and the conclusions drawn.

Style

Use *JAMA* style or consult the AMA *Manual of Style.* Use the objective case, such as "the team determined" or "the study involved," not I or we, and avoid medical jargon. Use generic drug names unless citing a brand name relevant to your findings. Do not use abbreviations in the title and limit their use in the text.

Text

HMJ recommends that articles be divided into sections with headings:

Introduction.—The purpose of the article and rationale for the study. Do not review the subject extensively.

Methods.—Describe the patients or experimental animals clearly. Identify the methods, apparatus, and procedures in sufficient detail to allow other physicians to reproduce the results.

Results.—Present the results in logical sequence in the tables, illustrations, and tables. Do not repeat all of the data in the text, summarize important observations.

Discussion.—Emphasize the new and important aspects of the study and conclusions taken from them. Do not repeat data in Results section. State new hypotheses when warranted, but clearly label them as such. Recommendations may be included.

Illustrations, Tables and Figures

Use a recent issue of the *Journal* as your guide for creating tables and graphs. Each table and figure must be camera-ready, ie, black-and-white glossy stat or velox 3-1/2 inches wide, the size of a column. All copy within the table must be typeset in Helvetica 9 point, upper/lower case—no full caps, and all single spaced. Please limit the number of illustrations as the *Journal* is small.

Desktop computer-generated systems may be used if the print quality is comparable to typeset copy. Tables and graphs in courier or other typeface will be refused. Use Helvetica Narrow, headlines in boldface and upper and lower case. Subheads should be boldface, upper and lower case. Do not use screens.

Each figure or illustration should have a label pasted on the back indicating the figure number, name of authors, and the top of the figure. Do not write on the back, or scratch or mar them with paper-clips.

Illustrations must be 5x7, good quality, unmounted, glossy black-and-white prints and no larger than 8x10.

Figures should be professionally drawn and photographed.

Type legends for illustrations starting on a separate page with arabic numbers corresponding to the illustrations. When symbols, arrows, numbers or letters are used to identify parts of the illustration, identify and explain each one clearly in the legend. Explain internal scale and identify method of staining in the photomicrographs.

References

All references must be cited in the text and should be arranged in the order in which they are cited—not alphabetically. Please use the JAMA style for the references:

1. Jones J. Necrotizing *Candida* esophagitis. JAMA. 1982, 244:2190-2191.
2. Style L. *Biochemistry.* 2nd ed. San Francisco, Calif: WH Freeman Co; 1981:559-596. [Not CA]
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Acknowledge only persons who have made substantial contributions to the study. Authors are responsible for obtaining written permission from everyone acknowledged by name; readers might believe those acknowledged are endorsing the study and conclusions.

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Our Twentieth Anniversary, 1975-1995

Twenty years ago, when commercial carriers abandoned the medical professional liability insurance market, MIEC was formed by northern California medical societies and a group of pioneering physicians. When this liability insurance crisis spread to Hawaii, the Hawaii Medical Association agreed that physicians should participate in their own professional liability insurance company. With HMA support and sponsorship, MIEC was licensed in Hawaii and has provided protection for its physicians since 1981.

In our twentieth anniversary year, MIEC covers 5,200 physicians in California, Alaska, Hawaii, Idaho and Nevada. Together with our wholly-owned subsidiary, Claremont Liability Insurance Company, we can insure the liabilities of individual doctors and organizations involved in today's changing "managed care" environment.

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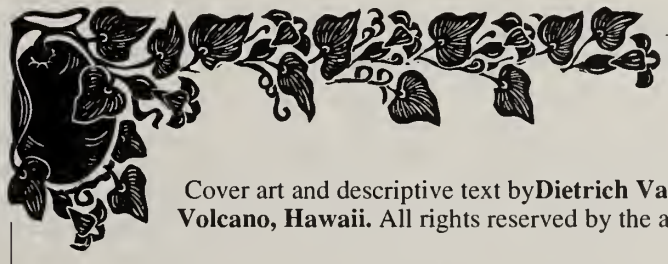
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The Art of Making *Kapa*

The utilitarian and ceremonial importance of bamboo in Hawaiian as well as many other cultures can hardly be overestimated. It is fitting therefore that the goddess *Hina* is credited with having brought bamboo to Hawaii from Kahiki.

As told in the *Kumulipo*, Hawaii's creation chant, Hina's son Maui performed his fourth great feat with the bamboo of Kane and Kanaloa. This association with the bamboo establishes Hina's son as chief of very high rank.

But the most widespread use of the bamboo was reserved for Hina herself. Hina held dominion over the art of making *kapa*. Once made, this wonderful soft bark cloth was often printed with intricate designs. The process was basically a block printing technique and the blocks or stamps were made exclusively from bamboo. This unique block printing technique is found nowhere else in Polynesia.

Editorials

Memorial Festschrift—May 1995 Fred Gilbert Jr, MD

Our May issue was to have been a surprise to Fred Gilbert, but Fred died on Sunday, February 5 in Straub Hospital.

Dr Robert Nordyke, an associate and friend of Fred's for many years, has been working at a hectic pace getting manuscripts, letters, and photographs for this Festschrift.

The May issue will be a fitting testimonial to "the finest physician I've ever known" in the words of the late Dr Morton Berk and echoed today by all of Fred Gilbert's associates.

Our Next Issue of the Journal: Medicine, Law and Bioethics A Very Special Issue

Look for our special issue on Medicine, Law and Bioethics in April. Guest Editor S.Y. Tan is unusually qualified for this assignment. Not only is S.Y. a respected physician, he is also an honored attorney. He also serves as chairman of the Hawaii Medical Association's Medical, Ethical, Moral and Legal Concerns Committee. Undoubtedly this issue of the *Journal* will serve as a valuable reference for many years. Be sure to look for it in April. We will have extra copies available.

Norman Goldstein MD, Editor

Guest Editorial: Epinephrine for Anaphylaxis

In my struggle as a lone crusader for a model bill to allow trained laymen to administer epinephrine to people having anaphylactic reactions, I appeared before the FDA and the NIH Open Consensus Panel. I appeared before the AMA Board of Trustees at the request of my Senator from North Carolina. I began my talk, "I have some bad news for you and some good news. The bad news is that any one of you can walk out of this hotel and be stung and die in five minutes even if you have never had a previous reaction. The good news is that if a trained layman, such as a policeman, were allowed to give epinephrine, you would be saved."

After 10 years, many letters and frequent phone calls, the American Medical Association decided to prepare a model bill. This allows trained persons to administer epinephrine to a person suffering from a severe reaction to an insect sting. Death can occur in five to ten minutes and in most cases, this is insufficient time to get to a doctor or to a hospital and the person can die.

For 20 years, I have been a Lone Crusader in educating laymen, especially teachers, on the importance of diagnosis of an anaphylactic reaction due to insect stings and immediate treatment with an insect sting kit. Children playing at recess are very likely to get stung. If one has an anaphylactic reaction, there usually is not time to get to hospital or to a physician.

I feel so deeply about this life-saving endeavor that I have done the work to date with no help financially. I have also been able to get the army, navy, air force, marines, and park services to include insect sting kits containing epinephrine in their medical kits.

There are many needless deaths because of the ignorance of laymen. A nurse who was a patient of mine told me about her brother who was cutting a hedge around a doctor's home. He was stung and had an anaphylactic reaction. He went inside and called for an ambulance. The doctor didn't know what to do, the EMT workers didn't know what to do, and the doctors at the emergency room didn't know what to do. He died. There are many needless deaths because of the ignorance of laymen.

Some high-school football players who die suddenly have their deaths in most cases attributed to heart attack. Investigations of some of these deaths have disclosed other players had heard the victim say that he had been stung. And the findings are consistent with anaphylaxis.

Sometimes a physician may be ignorant of proper management and administer antihistamines or steroids. For example, a young boy received multiple stings and was rushed to a nearby hospital. The physician wasn't sure of the proper treatment and sent him to another hospital. At neither hospital was the boy given epinephrine.

Early treatment with epinephrine after an anaphylactic reaction can be life saving. Even after this injection, the patient should always go to a hospital.

Persons in charge of others, especially outdoors, such as schoolteachers, coaches, school nurses, tennis or golf pros, and forest rangers should be legally allowed to administer life-saving epinephrine.

The American Academy of Allergy and the American College of Allergy have passed special resolutions supporting this. Also, the past presidents of the American Academy of Family Practice and of the American Academy of Pediatrics have written letters of support.

Only 15 states have passed this law. To be legal in the administration of epinephrine, a layman must receive training by a physician. I have prepared a training program complete with slides that I can furnish at cost to physicians wishing to conduct training programs in states that have passed the law.

Recently, a woman from Florida called to tell me of her handicapped son who was severely allergic to bees. He had had a reaction and was given an insect sting kit. She explained this to the boy's bus driver. The driver told her that due to state law, he was unable to give any type of injection or medication. The mother and I have been working to have Florida change this so even bus drivers can legally administer epinephrine. She asked me to appear before the Senate Subcommittee of Health Care and Health Rehabilitations Services.

In Asheville, a mother called me to report that her son, who also had had a previous reaction, was fishing one day when he was stung and died. She called because she knew of the work I was doing and told me the doctor had given the boy antihistamines to take if stung again, and asked if this was right. I knew it was too late to save the boy's life, so I didn't say anything.

Dr Donald Cook of the American Academy of Pediatrics and

School Health Committee wrote in a letter to the chairman of the Communications and Public Information Committee of the American Academy of Pediatrics, "The problem is this: 1) Very few school people, parents, or physicians are aware of the potential seriousness of the problem. 2) If they were aware, they wouldn't know what to do. 3) If they did know what to do, they would be afraid to do it, or 4) Their school administrators would prevent them from doing it for fear of a lawsuit.

It is legal for a person having an insect sting reaction to obtain an insect sting kit but fatal reactions can and do occur in persons with no previous history of reaction. It still amazes me when at lectures I give I hear of a person who has had a severe reaction previously and was given only an antihistamine to carry. This will not save lives.

People do die from anaphylactic shock reactions to insect stings, and I am convinced that there are many more not documented because of misdiagnosis.

On November 16, 1993, the American College of Allergy and Immunology recognized Claude A. Frazier MD, with a special Award of Appreciation "for his outstanding efforts in educating the public about the life-threatening dangers of insect allergy." Dr Frazier is author of Insects and Allergy: and What to Do About Them *(University of Oklahoma Press) and* Insect Allergy: Allergic and Toxic Reactions to Insects and Other Arthropods *(Warren H. Green Publishing).*

Our peer reviewer had some very cogent questions:

"The point that injectable epinephrine is the only medicine that has a rapid enough onset of action to treat an acute severe, rapid-onset anaphylactic reaction is of paramount importance. I have reservations about who should be trained to administer epinephrine. Some patients are very sensitive to the effects of epinephrine. The dose of 0.5 cc or 0.3 cc usually recommended makes some patients so shaky their teeth chatter or it causes cardiac conditions to worsen. If they are having a less severe reaction, 0.1 cc is adequate. How do we train laypersons to make these judgments? If we train to give epinephrine, what other life-saving treatments should we train laypersons to administer? Are we opening a Pandora's box?"



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–Keith Katano,
Group Administrator,
Medical Arts Clinic

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Dr Frazier replies:

"To answer the question of the reviewer: The people who should be trained to administer epinephrine are those who are in charge of others (especially schoolteachers). We have had no complaints concerning the use of 0.3 cc epinephrine and there are no contraindications. It is simple, easy, and has no side effects.

I have put together a training program that is a half-hour long and it explains anaphylaxis, the symptoms, and the proper treatment of an anaphylactic reaction to insect stings (or food or additive allergy). I have prepared a simple training outline, complete with slides, for use in giving the program."

Claude A. Frazier MD

Dr Frazier has offered to come to Hawaii to conduct this training program. He can be contacted at his Asheville, NC office.—NG

Letter to the Editor

The editor welcomes letters from members of the Hawaii Medical Association as well as nonmembers. All letters must be signed with the writer's correct signature and include the address and telephone number for our verification.

Letters should be on a single subject and no longer than 200 words. Send to Letters to the Editor, Hawaii Medical Journal, 1360 S. Beretania Street, Second Floor, Honolulu, HI 96814.—ED.

Wonder What Hippocrates Would Say?

Midway through the Hawaii State Legislative Session 1995, I'm already feeling like an old pro at screening bills, preparing testimony, and hanging around the senators and representatives, staffers and lobbyists. I've volunteered to be Executive Director of the Hawaii Federation of Physicians & Dentists, and this work is part of the job description; so is talking to lots of docs and their spouses about what is happening. I've discovered that there are many well-intentioned people out there trying to affect legislation dealing with health and medical care, trying to push their particular agendas. As a matter of fact, I recently introduced myself to HMSA's lobbyist and bought her a cup of coffee, joking that I was "fraternizing with the enemy." She turned out to be a very nice person, and very sincere in regretting that many people have a wrongly negative view about HMSA. I'm sure many of you would like to tell her about a few experiences you've had to justify your particular views about HMSA.

The point is, physicians who take care of people on a day-to-day basis have a unique and I believe very valuable perspective to contribute to the ongoing controversy about changing the way health and medical care is delivered. Ironically, those docs with the busiest practices in this community, who are presumably highly respected both by colleagues and patients, find themselves too busy for "politics." *Big Mistake!* All the well-intentioned people from HMSA, the Governor's office, Dept. of Health, the labor unions, the Nursing Association, etc, have lots of time to come to the Legislature and aggressively try to advance their views. I see a glaring imbalance and whether the rest do or not, they don't seem eager to seek out the physician and patient perspective. They often don't realize that perhaps their agendas will have a detrimental effect on the quality of patient care and the ability of docs to do their best for their patients. They don't know what they don't know! Maybe we've got to amend the Hippocratic oath—"I further promise never to be apathetic about politics, support MD organizations, and testify at least two times at the Legislature on health care matters!

Susan Chong Wong, Esq.
President, Auxiliary to HCMS

Historical Notes

John A. Breinich
Executive Director
Hawaii Medical Library

Modern dentistry in Hawaii has its earliest recorded dental surgery on January 16, 1835 when Dr Alonzo Chapin, a missionary physician, extracted a tooth. His diary tells about a Mr Dibble: "A tumor growing from the socket of the tooth I extracted for him the other day and he has considerable apprehension about the result. I succeeded in pacifying him somewhat, but fear that a painful and formidable operation may yet be necessary: no less than break up the cheek bone, to come at it so as for removal." And there was no anesthetic then.

On December 11, 1847, Dr M.B. Stevens arrived in the islands as probably the first professional dentist. He advertised in the newspapers of his readiness "to perform any operation on the teeth that may be required, including insertion of teeth from one to an entire set, either on Pivot or Gold Plate." After 5 weeks he discontinued his advertisements and left the islands.

After studying a friend's dental books, passing the New York Dental Examination and having a practice in Albany, New York for four years, Dr John Mott-Smith opened his dental practice in Honolulu on April 26, 1851 and became Hawaii's first permanent dentist. Dr John M. Whitney, described as the first graduate dentist to practice in Honolulu, moved to Honolulu in 1869 to take over the practice of Dr Mott-Smith while he was in Washington DC. When Dr Mott-Smith returned, together they formulated the Board of Dental Examiners and Dr Whitney became the first president.

The first native-born Hawaiian dentist was Dr George Hermann Huddy who began studying dentistry in Honolulu in 1883 at the age of 14. He opened his own practice at the age of 18 and was quite successful. Later he enrolled in the University of California School of Dentistry in San Francisco, received his degree in dental surgery in 1892, and returned to Honolulu to resume his practice.

Medical School Hotline

The Role of Genetics in (Continuing) Medical Education in Hawaii

Berkley Powell MD and
Yuen Edward Hsia MD
Department of Genetics and Pediatrics
John A. Burns School of Medicine

Medical education has to be a lifelong professional commitment for physicians. There has been a rapid evolution of new techniques, new concepts, and, unfortunately, new jargon in the field of Genetics. To understand the role of heredity in human disease, it is imperative that past as well as present students acquire, and continue to add to, this new lexicon.

Gene regulation is no longer a simple concept of "one gene, one protein." Getting from the trinucleotide code in the DNA to protein function in cells is a tortuous path marked by many yet-to-be-understood road signs. *Promoters* initiate gene transcription, *introns* are "spliced out," and *exons* code mRNA. mRNA is further processed and finally allowed access to tRNA to translate its code into amino acids that form proteins like beads on a string. These proteins are still usually only functional after further modification. Concepts such as "alternative mRNA splicing" or "post translational" modification-producing proteins with different structure and function in different tissues have altered dramatically our understanding of organ specificity and selectivity in genetic disorders.

One explicit goal of Genetics is to better understand and treat human diseases. Defining the cause of gene differences producing altered function has confirmed some traditional concepts but has also provided many surprises. In several enzyme disorders, the confusing interfamilial clinical *variability* has been shown to be due to different defects of the gene with profoundly different effects on protein stability and function. Understanding *intrafamilial* variability has proven more difficult and we are often left with invoking such unsatisfactory concepts as gene-gene or gene-environment interaction. Furthermore, finding different abnormal genes that cause similar phenotypes has confirmed one theory of *genetic heterogeneity*, yet not fully explained is the corollary, ie, defects in the same gene can give totally different phenotypes!

Naively, early workers thought that once we discovered the gene for a certain disorder we would have a consistent way to test for the presence or absence of the defect. Soon it became apparent that some disorders are caused by many different mutations and simple screening for those disorders would not be practical. Fortunately, knowing specific mutations in a family provides for more accurate diagnosis, both symptomatic and pre-symptomatic, and to help in prenatal testing.

Delineating these new genetic concepts has helped us to understand disturbed organogenesis better, inherited resistance to disease, inherited susceptibility to cancer, and is beginning to provide new diagnostic tests and novel therapeutic agents. Genetic testing is now routinely applied in the laboratory. For example, detection of microbial genetic material in tissue samples helps to confirm their role in pathogenesis. Genetic markers are routinely looked for in tumors to understand disturbed cellular regulation. Oncogenes and tumor suppressor genes have been found throughout the genome and predicting susceptibility to certain tumors will hopefully allow individuals better access to preventive measures in the future. DNA typing has become standard for paternity disputes and forensics in some states.

Primary care physicians, particularly in the climate of managed health care, will have to convey basic genetic information to their patients while still being faced with the challenge of knowing when to refer individuals or families for more comprehensive evaluation with genetic specialist. Treatments have already been impacted. Specific metabolic "co-factors," recombinant DNA-produced hormones and enzymes, and even "corrected gene" therapy are now available for rare genetic diseases. Educational and supportive genetic counseling is becoming increasingly more demanding and allied health care profession-

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als are playing a larger role, requiring physicians to become educated about other disciplines and the advantages of using these colleagues. Obstetric specialists must be able to identify pregnancies at high risk for fetal abnormalities, and are required to understand and perform increasingly complex fetal diagnostic tests. And finally, to understand state- of-the-art chromosomal and molecular DNA tests, all physicians will need current information updates from our laboratory colleagues.

The rich ethnic diversity in Hawaii means different genetic disease susceptibilities have been introduced along with diverse cultural heritages. Also, each population has its own range of normality for routine and special tests, which have to be considered in medical evaluations and treatments. Ongoing research at the University of Hawaii, the Cancer Research Institute, and other community-based, federally funded programs is providing valuable information about genetic variability as related to various diseases in our population unique to the nation and the world.

In the face of this flood of new information, all Hawaii health professionals need to maintain an up-to-date understanding of relevant genetic advances. The UH faculty is actively teaching students at every level of training, as well as medical practitioners and health professionals throughout the state. In addition lay education impacts in both directions. Well-informed physicians educate their patients and families and direct them to other resources. The well-informed consumers, through networks such as support groups, learn about their specific health-related problems and update their providers on current information. In addition, family education is an integral part of every genetic counseling session. Health care professionals, including clinical geneticists and research geneticists, provide education in cooperation with all branches of the mass media.

Finally, clinical care is driven by ongoing research, both basic and clinical (applied). Genetic research tools are being used in research to add to knowledge that can benefit people everywhere. Basic genetic research in Hawaii has ranged from studying evolutionary, quantitative, and cyto-genetics, gene-environment interactions, embryo-genesis, and cell-cell communications in fungi, insects, birds and mammals. In clinical research, an example of the marriage of the research expertise in the state with the unusually diverse ethnic population has produced clinically useful information about inherited thalassemia. Data from the largest known family with inherited precancerous von Hippel Lindau disease were instrumental in locating and identifying the gene that is mutated; special DNA tests are now being used to identify gene carriers in this family. Collaborations with colleagues elsewhere include trying new treatment for otherwise lethal a-thalassemia, assessing the relation of muscular dystrophy with eye abnormalities, and looking for a human obesity gene.

The 21st century physician will likely be in an unprecedented position compared to the 2,000-year-old model. The human *genome* will be nearly characterized. It is hoped the information learned will confirm other traditional concepts but will just as likely provide even more startling discoveries. This newly gained ability to understand the role of heredity in causing and preventing disease will provide for even more innovative *manipulations*. It is hoped that researchers and physicians will approach this opportunity in awe of the power of the tools and continue to show respect for the uniqueness of their species. Lay education will have to parallel medical education so public fears of misuse will not outweigh the benefits. And finally, society will have to develop a multidisciplinary forum to monitor these approaches to safeguard the public.

Military Medicine

Tripler's Travels: Reports from the Field

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

The medical staff at Tripler Army Medical Center (TAMC) are routinely called to provide health care away from home. There are a number of different types of missions supported by physicians and ancillary staff from TAMC. These include military deployment, humanitarian relief missions, medical assistance to civilian populations, disaster relief services, and support of United Nations' peacekeeping missions.

Training for these types of missions is integral to the military physician's job. A series of training courses in field medical operations is routinely taken by all Army physicians. A combat casualty care course (C-4) is mandatory for Army interns. This experience provides training and certification in advanced trauma life support (ATLS) and an intensive exposure to operational field medicine. The course is taught at Fort Sam Houston, San Antonio, Texas, and is usually a welcomed interlude during the rigors of internship.

Advanced training in specialized areas is available for physicians with particular interests, or for those who will require skills for a specific mission. The Army conducts so-called short courses of 1-week to 4-week duration in subjects such as medical management of chemical, biological and nuclear injuries, field sanitation, arctic survival skills, environmental medicine, tropical medicine, hyperbaric medicine, aviation medicine, and preventive medicine. Residency programs


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are available in aerospace medicine and preventive medicine.

Physician deployment from TAMC are frequently in support of the 25th Infantry Division at Schofield Barracks. This provides routine opportunities for physicians to support local training drills in Kahuku, at Dillingham Field, or at Pohakuloa Training Area high on the slopes of Mauna Kea. Yes, you can sometimes spot a Tripler physician sitting in the back of that dusty two-and-a-half-ton truck along Kamehameha Highway in Haleiwa.

More distant deployments have taken physicians to the Republic of the Marshall Islands to care for Chinese immigrants aboard an illegal freighter, to Mongolia for a humanitarian assistance mission, to the Republic of the Philippines for humanitarian assistance, to the Federated States of Micronesia and Palau to screen for valvular heart disease, and to Japan, Korea, and Thailand for military training. A large contingent is currently in Haiti to participate in UN peacekeeping efforts. Tripler physicians have routinely deployed to Honduras for the past five years.

Tripler's doctors practice medicine throughout the world. They bring the lessons learned and experience gained back to Hawaii for us all. In the months to come I will bring a series of "Dateline" reports to this column, from the Traveling Tripler Doctors.

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

HMA President's Message

Frederick C. Holschuh MD

I have been thinking of all the monumental issues affecting medicine that we are discussing on an almost daily basis. Things like the Governor's proposed expansion of QUEST, the AMA's report on the ethical issues of managed care, organization of physicians into networks, workers compensation, and for those of us on the Neighbor Islands, the continued search for more autonomy of our community hospitals. It all seems so frustrating at times that I decided to discuss instead something that is dear to my heart: Alcohol and drug-impaired driving.

A few days ago Dr Craig Thomas, Becky Kendro, and I went to the Legislature to a Senate hearing on SB 1608 to lower the illegal level of blood alcohol from 0.1 to 0.08. Thomas testified for the American College of Emergency Physicians, Hawaii Chapter, and I for HMA.

I mentioned in my testimony that as a 24-year veteran emergency physician, I am very tired of people being killed and injured by alcohol-impaired drivers. I am tired of telling people that their loved ones are dead, knowing that a drunk driver killed them. I am tired of friends of mine being killed by drunk drivers. I very emphatically stated that the AMA and HMA have taken a position that 0.05 should be the illegal level but anything is an improvement. Thomas pointed out that commercial drivers have a standard of 0.04, so why not other drivers.

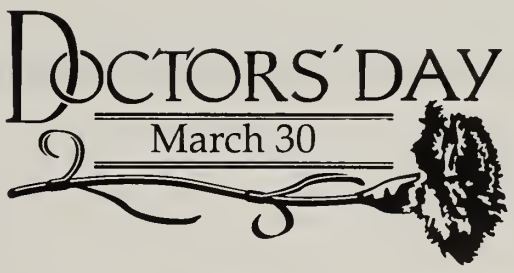
Then I said to Senator Lehua Fernandes Salling (Kauai) and the committee what I usually feel personally. I think it is time for those of us in leadership roles to demand the gold standard: Zero. I think we should not tolerate *any* level of alcohol or drugs for anyone operating a motorized device that puts innocent people in harm's way. The only people at the table who vigorously objected to this concept were a man representing the liquor industry and a private citizen who began his testimony by stating he wished he had a drink before testifying.

If we ever had the wisdom as a society to adopt this zero-tolerance position for drivers, think what would happen. There would never be a legal argument about the level of alcohol, chain of custody of samples, how long marijuana and other drugs stay in the body, etc. Zero is zero. More important, we might pick up more problem drinkers and drug users, and instead of jail, mandate them into treatment, and most important of all, have generations to come grow up with the knowledge that it is a norm of behavior never to drink and drive and always to have a designated driver. Give this some thought. *Mahalo.*

HMA Alliance

Lillian Nishi, President

Your Partners in Good Health Salute You on Doctors' Day 1995 — March 30.



March 30 is Doctors' Day throughout the nation. As the HMA Alliance has done in past years, we will honor physicians on March 30 by distributing mementos to our Hawaii Legislators to remind them of the dedication of our physicians in their tireless efforts to improve health and medicine and provide quality care.

The HMA Alliance will meet at 9 am in the lobby of the State Office Tower, Leopapa A Kamehameha Building, at 235 South Beretania Street, and we invite all Alliance members to join us.

Following the distribution of our gifts to the Legislators, the Physician of the Year Reginald Ho, HMA President, President-elect, Honolulu County Medical Society President, and other officers will be honored on the floor of the House and the Senate, and then the legislators each individually greet and express their appreciation to our physicians for their hard work and dedication.

As in past years, the HMA Alliance is pulling together a special two-page ad in the *Honolulu Advertiser* for Doctors' Day—our Lei of Aloha to all Physicians on Doctors' Day—and we will be working with hospitals and distributing special lapel buttons for the occasion.

HMA Council Highlights

February 3, 1995
Roger T. Kimura MD, Secretary

The HMA Council meeting was called to order at 5:40 pm by Dr Frederick C. Holschuh, President. Members present were Drs F. Holschuh, C. Lehman, President-elect, R. Kimura, J. Spangler, A. Don, C. Kam, R. Stodd, L. Howard, E. Bade, D. Canete, K. Meyers (for M. Joshi), T. Smith, T. Au, P. Chinn, W. Dang, Jr., S. Hundahl, B. Robinson, M. Shirasu, J. Betwee, B. Shitamoto, P. Kim, A. Bairos, J. Chang, W. Chang, W. Dang, G. Goto, J. Lumeng, S. Wallach, C. Goto, L. Nishi- President HMA Alliance and two medical student representatives.

Staff members present were: J. Won, N. Jones, B. Kendro, J. Asato, P. Kawamoto, A. Rogness, recording secretary.

Dr Holschuh reported that he had participated on a panel to discuss managed care at an Estes Park Seminar on the Big Island. He said there was plenty of interesting discussion about hospital governance. He also reported that he and a number of physicians were appointed by Governor Waihee to be on the Agency for Community Hospitals Task Force and they completed their report with the help of a consultant. Dr Holschuh asked Council to encourage legislators to listen to the report and to ask questions.

Mrs L. Nishi (HMA Alliance President) reported that Shirley Kam, Alliance Membership Chair, has updated the telephone list of all its members and has contacted them to join the national organization. She also reported that the legislative telephone tree will be active with a number of participants.

Actions

1. A motion was passed by Council to postpone a decision on supporting the Area Health Education Center (AHEC) program until a written description is received from the medical school and faxed to all Council members. Dr Holschuh will act on the majority of the responses received, to support or not support AHEC.

2. A motion was passed by Council that the HMA endorse the AMA's policy 130.993 and make it the HMA's policy to read as follows:

Use of Emergency Medical Information Aids: The HMA 1) endorses and encourages the use of effective medical information aids by which appropriate individual medical information can be brought to the attention of emergency personnel; and 2) supports continued review of existing medical information aids to determine appropriate steps to encourage greater use of those information aids which are considered effective.

3. A motion was passed by Council to appoint an HMA member to the Credential Verification Service Board as invited by Queen's and Kuakini.

4. A motion was passed by Council that the HMA Computer Committee be charged with looking into the concept of a computerized projection system and to inventory HMA's current computer equipment to see what would be required to be compatible with such a projection system.

5. A motion was passed by Council that the Legislative Committee review HB 1384 (relating to the Hawaii Health Care Council) and report to the HMA Council at the next meeting. This would preclude testimony from HMA in favor of this bill until it is discussed.

6. A motion was passed by Council that the HMA Executive Committee make arrangements to hold a special meeting/seminar inviting HMA members to discuss the topic of managed care.

Component Society Reports

Honolulu.— Dr D. Canete reported 1) that the HCMS is in the process of studying the feasibility of a generic hospital ID card. 2) The expansion of mailing to nonmembers is costing the HCMS abut $5,000 a year. He also distributed at Council a list of HCMS nonmembers by zip code and asked physicians to contact nonmembers in their areas to join. 3) The HCMS is looking at restructuring the Board of Governors because of poor attendance. It might be structured by geographic distribution and each geographic area will then vote its own member. 4) The VISION 2000 brochure will go out as a mailing. A letter to legislators was distributed at the meeting.

Hawaii.— Dr E. Bade reported 1) that Hawaii County had its monthly meeting on computers and medicine and was well attended, 2) an ad hoc committee has been set-up to look into recruiting physicians to Hawaii, especially orthopedic, ENT, and ER physicians.

Maui.—Dr J. Betwee reported that Dr Bernard Fong spoke about Medicare at their last meeting.

West Hawaii.— Dr T. Smith reported that Dr Bernard Fong also spoke at their county meeting and it was very well attended. There was also good discussion at the meeting on hospital reorganization plans around the state.

For Information

Legislative Issues.—Dr J. Lewin reported that there is a consensus on the Patient Protection Act and on the possibility of including a point of service arrangement. There will also be a number of bills introduced on managed care this year. Dr Lewin encouraged physicians to go to the Capitol and spend one day to get acquainted with the legislative process and participate in discussion.

It was pointed out that budget cuts might cause Kona Hospital not to receive the $9,000,000 promised to refurbish the building and for more hospital beds. Physicians were asked to talk to legislators and encourage them to support the Hospital Improvement Bill.

Medical School.—Dr C. Gulbrandsen was asked to attend Council to discuss the rumors that there is a plan to sell the medical school. Dr Gulbrandsen said that at the UH Annual Faculty Retreat in early January, he spoke on the context of medical education funding now and the future. Funding for medical education is dropping every year. Funding the residency program can be a problem when government money disappears. Direct money in the form of grants and contracts to medical schools is starting to shrink. State funds are also diminishing. This along with managed care has Mainland hospitals quite nervous that HMOs have partnered with medical schools.

Dr Gulbrandsen acknowledged an offer was made by a California HMO asking if they could buy the John A. Burns School

of Medicine to start another program in California. The representative stated that when managed care is in full bloom the demand for primary care physicians is going to far exceed the supply. The point Dr Gulbrandsen wanted to make to the faculty is that the medical school has to start thinking of ways to survive in a time of shrinking funding. Some may also have heard of the proposal to build an international medical school.

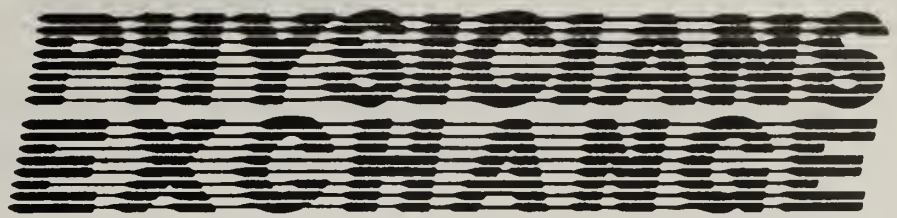
The UH medical school is one of the most international medical schools in the world. Asian countries put a high value in the American medical system and Asian physicians put a high value on a medical degree from the U.S. An international medical school could train physicians throughout Asia who would look to Hawaii as their parent school and refer their patients here when they need tertiary care. Dr Gulbrandsen agreed to submit a written version of his thoughts on an international medical school to both the *HMA Newsletter* and the *HCMS Bulletin*.

Hawaii State Science and Engineering Fair.—The fair will be held on April 4 to 6. Dr Lehman asked for two volunteers to serve as judges. It was noted that the high school students produce state-of-the-art projects and the best project will be awarded the HMA *Kahuna Lapaau* Medical Science Award, a $1,000 scholarship.

Distinguished Medical Reporting Awards Banquet.—The banquet will be held on Saturday, April 29 in the Hilton Hawaiian Village Tapa Ballroom. Billy Sage will be the master of ceremonies and Marvin Hall, President of HMSA, will be roasted by a distinguished panel. The tickets are $100 a person or $1,000 for a table of 10. Any profit from the banquet will go to the Community Research Bureau for the purchase of awards for the next year.

QUEST.—Dr Andrew Don, Chair of the Governor's Advisory Committee on QUEST, reported that the announcement of an expansion of QUEST in the State-of-the-State Address was a surprise to everyone. HMA's concerns about the expansion were sent to the Advisory Committee. After much discussion at Council, Dr Holschuh will draft a letter setting forth HMA's concerns about the expansion of QUEST.

Japan Earthquake Relief Fund.— A letter from HMA was sent to membership requesting contributions to the relief fund. Contributions may be made to the Community Research Bureau.



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Pre-Participation Examination: A New Form for Hawaii

Andrew W. Nichols MD,* Barton P. Buxton EdD, ATC,** Kwok W. Ho PhD***

A recent study examining the adequacy of the existing pre-participation physical examination (PPE) form in the State of Hawaii[1] suggested that the form be modified and expanded. The standards for a comprehensive PPE indicate that the screening should include an extensive medical history, assessment of height, weight, blood pressure, pulses, vision, cardiopulmonary (heart, and lungs), maturation, skin, abdominal, genitalia, and musculoskeletal function. Pursuant to the recommendation of this recent study and the accepted standards of the American Academy of Family Physicians, American Academy of Pediatrics, American Medical Society for Sports Medicine, American Orthopedic Society for Sports Medicine, and the American Osteopathic Academy of Sports Medicine, the PPE form utilized by the Hawaii High School Athletic Association has been drastically modified. The new form includes an expanded medical history, a maturational assessment (Tanner Stage), a complete musculoskeletal examination, and a participation clearance and recommendation.

Introduction

The primary purpose of the pre-participation physical examination (PPE) is to identify whether a student-athlete is at undue or inherent risk of potential injury or illness prior to his or her participation in a specific sports activity. Following the results of a recent study that examined the adequacy of the existing PPE being used for screening student athletes in Hawaii,[1] a new PPE form (Figs 1, 2) was adopted by the Hawaii High School Athletic Association (HHSAA). The new PPE form is patterned after combined recommendations of the American Academy of Family Physicians, American Academy of Pediatrics, American Medical Society for Sports Medicine, American Orthopedic Society for Sport Medicine and the American Osteopathic Academy of Sports Medicine. The purpose of this article is to familiarize the Hawaii Medical community with the new HHSAA-PPE form and provide a brief overview of the goals and objectives of the specific evaluation.

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Goals and Objectives of the PPE

The literature is clear on the goals and objectives of the PPE, which are to enhance and maintain the health and safety of students participating in high risk activities (organized athletics).[2-7] The overall goals of the PPE are met through primary and secondary objectives. The primary objectives are: 1) *To detect any condition that may limit a student-athlete's participation.* This includes any medical conditions that might contraindicate participation in certain activities (eg, heart murmur consistent with hypertrophic cardiomyopathy may lead to increased risk for sudden death). 2) *To detect any condition that predisposes a student-athlete to injury during competition.* This includes past or present injury/illnesses, congenital or developmental anomalies, and a lack of general wellness (eg, an obese student-athlete may be at increased risk for heat-related illness, or a student-athlete with a musculoskeletal injury that has not been adequately rehabilitated). 3) *To meet any legal or insurance requirements.* The Hawaii High School Athletic Association and the Hawaii Department of Education require that all students participating in interscholastic activities complete a PPE.

The secondary objectives of the PPE are: 1) *To determine the general health and wellness of the student-athlete.* In some cases, the PPE might be the only medical screening that a student receives during his or her high school career. 2) *To counsel the athlete.* This could be the only opportunity that a student has to interface with a medical professional concerning relevant medical/health-related problems and allows the physician to explain any abnormal findings, discuss general health considerations, and discuss preventive health topics such as birth control, and testicular and breast self-examination. 3) *To assess maturity.* Although some controversy exists on the assessment of maturity,[8-10] the fact remains that in Hawaii, student-athletes are engaging in organized high-velocity, collision-type activities which could predispose the immature athletes to a greater risk of injury.[8] Furthermore, in situations of coed participation in collision/contact sports, such as

football, wrestling, soccer, and judo, some form of maturity assessment might be warranted. 4) *To assess fitness levels and performance*. Although this is not an area that will be directly assessed by the physician during an office visit, the participation clearance may indicate the type of testing that a coaching staff should pursue, eg, if an athlete shows signs of obesity, he or she can be advised to participate in a slow-paced, structured fitness program, or if a student-athlete demonstrates muscular strength deficiencies, strength testing can be deferred until a rehabilitation program has been successfully completed.

Medical/Health History

A comprehensive medical or health history is the keystone to any medical evaluation. Some authors have indicated that a complete medical history can identify up to 74% of the pertinent medical problems affecting student-athletes.[7,11] Additionally, the medical/health history can specifically direct the physician toward areas of major concerns which may predispose the student-athlete to athletic related injury/illness.

The new HHSAA-PPE contains a one-page, 31-question, comprehensive medical/health history (Fig 1). The 31 questions are encompassed into 15 basic categories: 1) *Hospitalization/Surgery;* 2) *Medications*; 3) *Allergies;* 4) *Cardiovascular/Hypertension*; 5) *Skin*; 6) *Neurological/Head*; 7) *Heat Illness*; 8) *Respiratory*; 9) *Special Requirements*; 10) *Vision*; 11) *Musculoskeletal/Ligamentous*; 12) *Other Medical Related Problems*; 13) *Recent Medical Problems*; 14) *Immunization*; and 15) *Menstruation.* In each of the 15 categories, specific questions are asked to aid the physician in the identification of any particular problems or anomalies that might place the student-athlete at increased risk for athletic-related injury/illness.

The usefulness of this questionnaire can be illustrated in the area of "cardiovascular" questioning. Whereas more than 95% of sudden deaths in athletes involved the cardiovascular area, this history form asks 8 specific questions regarding potentially dangerous cardiovascular conditions. For example, "exertional syncope" could indicate underlying hypertrophic cardiomyopathy, conductive abnormalities, or valvular anomalies. Furthermore, "chest palpitation" could signify electrophysiological arrhythmia, such as Wolff-Parkinson-White syndrome. Overall, section 4 is designed to help the physician identify congenital heart conditions that could lead to sudden death, such as Marfan's syndrome or prolonged QT syndrome.

Another area of specific concern to the physician during the HHSAA-PPE history review is the "neurological/head" category. It is important to note whether seizures or headaches have occurred during or as a result of exercise. Furthermore, a history of prior head trauma can alert the physician to a predisposition of the *second impact syndrome*.[13-15] Repetitive episodes of traumatic neuropraxia of the upper extremities can indicate that the student-athlete suffers from congenital cervical spinal stenosis, cervical instability, or intervertebral disc protrusion. These student-athletes might warrant a more thorough evaluation, eg, plain x-rays, computerized tomographic myelography, and/or magnetic resonance imaging.

Physical Examination

Once the medical/health history has been reviewed by the physician, the general physical examination can be individually tailored to focus on specific areas of concern that can predispose the student-athlete to athletic-related injuries/illness, eg, exercised-induced bronchospasm. Specific changes in the physical examination portion of the new HHSAA-PPE involve the

Fig 1.— HHSAA PPE Medical History Form

Medical History Date _____

Name _____ Sex____ Age____ Date of birth _____

Grade _____ Sport(s) _____ _____ _____

Personal physician _____ _____ _____
Address Physician's phone

Explain "Yes" answers below:

		Yes	No
1.	Have you ever been hospitalized?	☐	☐
	Have you ever had surgery?	☐	☐
2.	Are you presently taking any medications or pills?	☐	☐
3	Do you have any allergies (medicine, bees or other stinging insects)?	☐	☐
4	Have you ever passes out during or after exercise?	☐	☐
	Have you ever been dizzy during or after exercise?	☐	☐
	Have you ever had chest pain dunng or after exercise?	☐	☐
	Do you tire more quickly than your friends dunng exercise?	☐	☐
	Have you ever had high blood pressure?	☐	☐
	Have you ever been told that you have a heart murmur?	☐	☐
	Have you ever had racing of your heart or skipped heartbeats?	☐	☐
	Has anyone in your family died of heart problems or a sudden death before age 50?	☐	☐
5.	Do you have any skin problems (itching, rashes, acne)?	☐	☐
6	Have you ever had a head injury?	☐	☐
	Have you ever been knocked out or unconscious?	☐	☐
	Have you ever had a seizure?	☐	☐
	Have you ever had a stinger, burner or pinched nerve?	☐	☐
7.	Have you ever had heat or muscle cramps?	☐	☐
	Have you ever been dizzy or passed out in the heat?	☐	☐
8.	Do you have trouble breathing or do you cough during or after activity?	☐	☐
9.	Do you use any special equipment (pads, braces, neck rolls, mouth guard, eye guards, etc.)?	☐	☐
10.	Have you had any problems with your eyes or vision?	☐	☐
	Do you wear glasses or contacts or protective eye wear?	☐	☐
11.	Have you ever sprained/strained, dislocated, fractured, broken or had repeated swelling or other injuries of any bones or joints?	☐	☐
	☐ Head ☐ Shoulder ☐ Thigh ☐ Neck ☐ Elbow ☐ Knee ☐ Chest		
	☐ Forearm ☐ Shin/calf ☐ Back ☐ Wrist ☐ Ankle ☐ Hip ☐ Hand ☐ Foot		
12.	Have you had any other medical problems (infectious mononucleosis, diabetes, etc.)?	☐	☐
13.	Have you had a medical problem or injury since your last evaluation?	☐	☐
14.	When was your last tetanus shot? _____		
	When was your last measles immunization? _____		
15.	When was your first menstrual period? _____		
	When was your last menstrual period? _____		
	What was the longest time between your periods last year? _____		

Explain "Yes" answers:

I hereby state that, to the best of my knowledge, my answers to the above questions are correct.

Signature of athlete _____

Signature of parent/guardian _____

addition of a maturation evaluation and a thorough musculoskeletal examination (Fig 2).

During the genitourinary portion of the PPE, the physician might want to perform the maturational evaluation of Tanner stage. Alternatively, this evaluation can be performed by patient self-assessment. Literature indicates that self-rating of pubic hair and breast stage development correlates well with that of a physician's examination.[8-10] This practice may be particularly useful in female athletes, who rarely receive a complete genitalia evaluation as part of a PPE. Figure 3 is a useful tool in the determination of Tanner staging (Reprinted with the permission of the American Medical Society for Sports Medicine).

The musculoskeletal evaluation portion of the physical examination represents the most drastic change in the new HHSAA-PPE form (Fig 2). This 13-point musculoskeletal evaluation allows the physician to specifically assess an individual's joint range of motion, integrity, and muscular function. The specific recommended tests are outlined in Table 1. All evaluation should assess active, passive, and resistive ranges of joint motion. "Active range" should always be performed first. If the student-athlete's active range of motion is complete, "end-feel," an objective determination by the examiner, may be assessed at the terminal range of motion. The resistive strength test should be performed in all appropriate active ranges of motion. All musculoskeletal testing should be performed and compared to the contralateral side.

Table 2.—Classification of Sport [16]

CONTACT		NON CONTACT		
	Limited		Moderately	
Contact/collision	contact/impact	Strenuous	strenuous	Non strenuous
Boxing	Baseball	Aerobic dance	Badminton	Archery
Field hockey	Basketball	Crew	Curling	Golf
Football	Bicycling	Fencing	Table tennis	Riflery
Ice hockey	Diving	Field events		
Lacrosse	Field (high jump,	(discus, javelin,		
Martial arts	pole vault)	shot put)		
Rodeo	Gymnastics	Running/track		
Soccer	Horseback riding	Swimming		
Wrestling	Skating (ice, roller)	Weight lifting		
	Skiing (cross country,			
	downhill, water)			
	Softball			
	Squash/handball			
	Volleyball			

Fig 2.— HHSAA PPE Physical Examination Form

Physical Examination

Height _____ Weight _____ BP ____ / ____ Pulse _____

Vision R 20/____ L 20/____ Corrected: Y N Pupils _____

	Normal	Abnormal findings	Initial
Cardiopulmonary			
Pulses			
Heart			
Lungs			
Abdominal			
E. N. T.			
Skin			
Genitalia			
Tanner stage	1	2 3 4 5	
Musculoskeletal			
Neck			
Shoulder			
Elbow			
Wrist			
Hand			
Back			
Knee			
Ankle			
Foot			
Other			

Clearance:

A. Cleared

B. Cleared after completing evaluation/rehabilitation for: _____

C. Not cleared for: ☐ Collision ☐ Contact ☐ Noncontact ___ Strenuous ___ Moderately strenuous ___ Nonstrenuous

Due to: _____

Recommendation: _____

Name of physician _____ Date _____

Address _____ Phone _____

Signature of physician _____

Determining Clearance

Without question, the single most-important aspect of the PPE is the determination of clearance. The new HHSAA-PPE form has an expanded participation clearance portion (Fig 2). When determining clearance for a specific problem, a physician should consider the following questions: 1) Does the existing condition place the student-athlete at increased risk of injury/illness? 2) Are other participants at increased risk of injury/illness because of this condition? 3) Can the student-athlete safely participate with appropriate treatment (eg, medication, rehabilitation, bracing, wrapping, or padding)? 4) Can the student-athlete participate on a limited basis during the initiation of treatment? 5) If clearance is denied for certain activities, are there any other activities in which that student-athlete may safely participate? Alternative activities should be explored for

those student-athletes that may be restricted in some way. Tables 2 and 3 present the classifications of sports and the recommendation for participation in competitive sports, respectively.[16] These tables may serve as useful resources when determining a student-athlete's participation eligibility.

Conclusion

The PPE can serve as a great opportunity for the physician to positively affect the health care of student-athletes. The HHSAA's willingness to review physicians concerns about the existing PPE forms, and to consequently adopt a new PPE form, clearly demonstrates its concern for the health and safety of the student-athletes participating in organized high school athletic programs in Hawaii. We are confident that the new HHSAA-PPE will have a positive impact on the overall standard of athletic health care in Hawaii. More information concerning the PPE can be obtained by contacting any of the following organizations and requesting a copy of their monograph on the Pre-participation Physical Evaluation: American Academy of Family Physicians, American Academy of Pediatrics, American Medical Society for Sports Medicine, American Orthopedic Society for Sports Medicine, and the American Osteopathic Academy of Sports Medicine.

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Table 1.—Musculoskeletal Evaluation by Body Part

Body Part	Function	Range of Motion	End Feel
Neck	Flexion	80-90° (chin to chest)	Tissue stretch
	Extension	70° (nose & forehand horizontal)	for all 4 planes
	Lateral Flexion	20-45° (ear to shoulder)	
	Rotation (axial)	70-90° (chin to shoulder)	
Shoulder	Flexion	180°	Tissue stretch
	Extension	50-60°	Tissue stretch
	Abduction	180°	Tissue stretch
	Adduction w/ Flexion	50-70°	Tissue approx.
	Internal Rotation	60-100°	Tissue stretch
	External Rotation	80-90°	Tissue stretch
Elbow	Flexion	140-150°	Tissue approx.
	Extension	0-10°	Bone to bone
	Supination	90°	Tissue stretch
	Pronation	90° (75° forearm/15° wrist)	Tissue stretch
Wrist			
	Flexion	80-90°	Tissue stretch
	Extension	70-90°	Tissue stretch
	Radial Deviation	15°	Bone to bone
	Ulnar Deviation	30-45°	Bone to bone
Hand/Finger	Flexion: MCP	85-90°	Tissue stretch
	PIP	100-115°	
	DIP	80-90°	
	Extension: MCP	30-45°	Tissue stretch
	PIP	0°	
	DIP	10-20°	
	Abduction	20-30°	Tissue stretch
	Adduction	0°	
Back	Flexion	40-60°	Tissue stretch
	Extension	20-35°	in all 4 planes
	Lateral Flexion	15-20°	
	Rotation	3-18°	
Hip	Flexion (supine/knee flex.)	110-120°	Tissue stretch
	Extension (prone/knee ext.)	10-15°	in all 6 planes
	Abduction (supine/knee ext.)	15-20°	
	Adduction (supine/knee ext.)	30°	
	Ext. Rotation (Knee flexed)	40-60°	
	Int. Rotation (Knee flexed)	30-40°	
Knee	Flexion	135°	Tissue stretch
	Extension	0-15°	in all 4 planes
	Internal Rotation	20-30°	
	External Rotation	30-40°	
Ankle/Foot	Plantarflexion	50° (flexion)	Tissue stretch
	Dorsiflexion	20° (extension)	in all planes
	Supination	45-60°	
	Pronation	15-30°	
	Toe Extension	1st Ray: 70°, 2nd-5th: 40°	
	Toe Flexion	1st Ray: 45-90, 2nd-5th: 40°	

Table 3.—Recommendations for Participation in Competitive Sports [16]

	CONTACT			NON CONTACT	
	Contact/ collision	Limited contact/impact	Strenuous	Moderately strenuous	Non strenuous
Atlantoaxial Instability	No	No	Yes*	Yes	Yes
* Swimming (no butterfly, breast-stroke or diving starts)					
Acute Illnesses	*	*	*	*	*
* Needs individual assessment (e.g. contagiousness to others risk of worsening illness)					
Cardiovascular					
Carditis	No	No	No	No	No
Hypertension					
Mild	Yes	Yes	Yes	Yes	Yes
Moderate	*	*	*	*	*
Severe	*	*	*	*	*
Congenital heart disease	†	†	†	†	†
* Needs individual assessment					
† Patients with mild forms can be allowed a full range of physical activities; patients with mild or severe forms or who are post-operative should be evaluated by a physician.					
Eyes					
Absence or loss of function of one eye	*	*	*	*	*
Detached retina	†	†	†	†	†
* ASTM Approved eye guards may allow the competitor to participate in most sports, but this must be judged on an individual bas					
† Consult ophthalmologist					
Inguinal hernia	Yes	Yes	Yes	Yes	Yes
Kidney (absence of one)	No	Yes	Yes	Yes	Yes
Liver (enlarged)	No	No	Yes	Yes	Yes
Musculoskeletal disorders	*	*	*	*	*
* Needs individual assessment					
Neurnlngic					
Hx of serious head or spine truama	*	*	Yes	Yes	Yes
Convulsive disorder					
Well controlled	Yes	Yes	Yes	Yes	Yes
Poorly controlled	No	No	Yes†	Yes	Yes††
* Needs individual assessment					
† No swimming or weightlifting					
†† No archery or riflery					
Ovary (absence of one)	Yes	Yes	Yes	Yes	Yes
Respiratnry					
Pulmonary insufficiency	*	*	*	*	Yes
Asthma	Yes	Yes	Yes	Yes	Yes
* May be allowed to compete if oxygenation remains satisfactory during a graded stress test					
Sickle cell traits	Yes	Yes	Yes	Yes	Yes
Skin (Boils, herpes, impetigo, scabies)	*	*	Yes	Yes	Yes
* No gymnastics w/mats, martial arts, wrestling or contact sports until no longer contagious					
Spleen (enlarged)	No	No	No	Yes	Yes
Testicle (absent or undescended)	Yes*	Yes*	Yes	Yes	Yes
* Certain sports may require protective cup					

Fig 3.— Determination of Tanner Stage. Reprinted with the permission of the *American Medical Society for Sports Medicine*

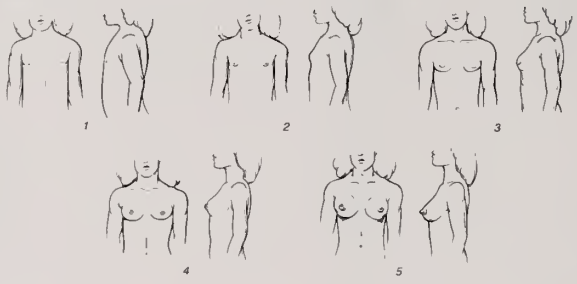


Figure 1. Tanner stages–breast.



Figure 2 Tanner stages–pelvic (male).

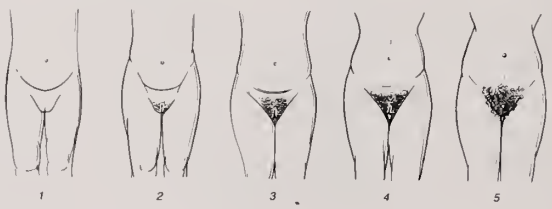
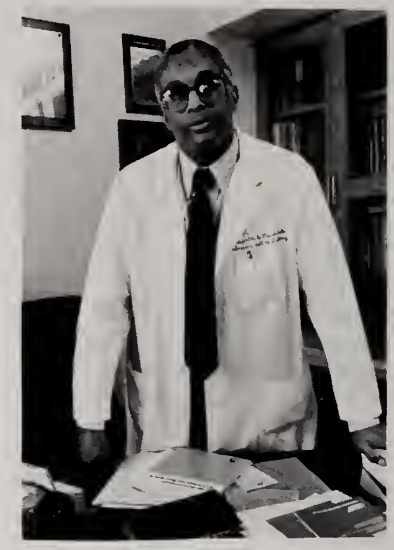


Figure 2 Tanner stages–pelvic (female).

You can help us raise the colorectal cancer cure rate.



"If everyone over 50 had checkups for colorectal cancer, the cure rate could be as high as 75%," says Dr. LaSalle D. Leffall, Jr., past president, American Cancer Society. "You can't cure it if you don't know you have it." But if it's detected early, the cure rate for colorectal cancer is very high. Your doctor can perform the digital and proctoscopic exams, and you take care of the simple stool blood test at home.

Since men and women are equally affected by this disease, we urge everyone over 50 to get regular checkups.

The warning signs for colorectal cancer are a change in bowel habits and blood in the stool.

People with a family history of colon or rectal cancer or ulcerative colitis are at higher risk and are urged to be doubly cautious.

Checkup Guidelines for men and women over 50 without symptoms:
- digital exam annually
- stool blood test annually
- procto exam every 3 to 5 years after 2 negative tests 1 year apart.

No one faces cancer alone.

AMERICAN CANCER SOCIETY®

Trends in Workers Compensation Costs in a Hotel-Operating Company Over a Six-Year Period

Charles R. Kelley MD, MPH, Clyde R. Mark, MS

A large Honolulu-based hotel-operating company reviewed its workers compensation costs over the last 6 years. Data retrieved from the company's computerized data base is used to describe trends in injury incidence rate, average cost per claim, average medical cost per claim, and medical expenses as a percentage of total costs. Factors that might have influenced these parameters include company reorganization, employee training and safety programs, changes in the economy, company morale, aggressive case management, and the quality of the adjusting services hired. Cause-and-effect relationships, although suggested, cannot be proven. The data is presented, in this year of imminent workers compensation legislative reform, to increase the available factual data base on which rational and efficacious reform proposals can be developed.

Introduction

In recent years, Hawaii businesses have seen tremendous increases in the cost of workers compensation, and as a result there have been repeated calls for reform of the workers compensation system. Unfortunately, few employers have the experience and expertise to fully understand the intricacies of this system, and even fewer employers have reliable data on which to base their requests for change. Requests for legislative change are often proposed according to beliefs and assumptions rather than being founded on objective facts. It is imperative that before further reform is proposed, accurate and understandable data on the true costs of workers compensation be generated and distributed to the community. Only after such data is considered should reform measures be proposed. The following article describes the trends and distribution of workers compensation costs at the Hotel Operating Company of Hawaii (HOCOH). It is hoped that the information will be used by health care professionals, businesses, insurance companies, employer groups, and public employees to formulate a sound approach to reforming the workers compensation system.

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Source of the Data

HOCOH is a Hawaii-based hotel-operating company that currently has approximately 2,400 full-time employees working in the state. Like other companies in the visitor industry, most of HOCOH's employees work in positions that are relatively low risk for injury, such as housekeeping or office work.

All workers compensation costs for the company are monitored through a central risk management office that maintains detailed records of every claim. The company is "self-insured" for workers compensation claims below $250,000 or an aggregate yearly cost of $2,000,000. Adjusting services are contracted yearly and insurance policy periods run from October 1 to September 30 of each calendar year.

In the last 6 years, the Risk Management Department has worked aggressively to control workers compensation costs and has created a comprehensive computer data base that can be accessed for review. In addition to having case records of every on-the-job injury, HOCOH is connected by computer modem to the insurance carrier, and through this connection it is possible to electronically review every check paid by the insurance adjuster.

Methods

Using the data base, all workers compensation claims filed between the years 1988 and 1993 were reviewed. Injury incidence rates were calculated according to Occupational Safety and Health Administration (OSHA) reporting guidelines to show the incidence rate per 100 employees per 12-month period. In calculating the total cost of workers compensation per year, all costs, both medical and indemnity, were included. The company's cost of maintaining a Risk Management office was excluded from all calculations. In determining the distribution, the costs were categorized as "medical" or "nonmedical." Medical expenses included payments to all health care providers including physicians, physical therapists, hospitals, chiropractors, massage specialists, naturopaths, osteopaths, and acupuncturists. Nonmedical costs included lost wages, disability settlements, adjusting costs, and legal expenses. For cases that were still open, ie, the injured employee had not yet reached medical stability and payments were still ongoing, the medical and nonmedical "reserves" were used for calculations since the reserves represent the most accurate estimate of future payments. In determining the yearly average medical cost per claim, costs were adjusted by the State of Hawaii Consumer Price Index to 1984 values.

Discussion

Table 1 lists the yearly injury incidence rate during the 6 years. In 1988 the incidence rate was 12.19 injuries per 100 workers per year, which is unusually high compared to other service industries in Hawaii.[3] The definitive reason for this high rate cannot be proven, but it is noted that this was also a period of extremely rapid growth within the company, many new employees were hired, and the Personnel and Risk Management departments were reorganized. We believe these factors contributed to the high injury rate.

Table 1.—Injury Incidence Rate

Year	No. Employees	No. Claims	Hours Worked	Incidence Rate*
1988	2594	302	4,954,723	12.19
1989	2722	209	4,747,278	8.01
1990	2838	275	5,551,176	9.91
1991	2880	259	5,459,418	9.94
1992	2670	185	4,583,925	8.07
1993	2600	140	4,338,649	6.45

* Incidence Rate = $\frac{\text{(No. Claims) (200,000)}}{\text{No. Hours Worked}}$
= The incidence of injuries per 100 full time workers per year

Table 2.—Average Cost per Claim and Average Cost per Employee

Year	Cost/Claim*	Cost/Employee**
1988	6,008.74	544.35
1989	4,292.57	419.48
1990	3,415.19	316.49
1991	6,503.04	474.18
1992	4,072.00	209.76
1993	3,214.60	165.68

* Cost/Claim = Total Cost/No. Claims
** Cost/Employee = Total Cost / No. of Employees

Table 3.—Distribution of Costs

Year	% Medical*	% Non-Medical**
1988	31.35	68.65
1989	30.35	69.65
1990	37.48	62.52
1991	38.08	61.92
1992	41.88	58.12
1993	46.30	53.70

*% Medical = $\frac{\text{(Medicals Paid + Medicals Reserved) (100)}}{\text{Total Cost}}$
**% Nonmedical = $\frac{\text{Indemnity Paid + Adjustment Costs + Indemnity Reserved) (100)}}{\text{Total Cost}}$

Since 1989, the injury incidence rate has been comparable to or below the average for service industries in Hawaii as a whole. For example, the private sector service industry injury incidence rate in Hawaii was 8.9 in 1992 while HOCOH's rate was just slightly lower at 8.07.[3] Since 1989, HOCOH has had a stable organizational structure and a continued emphasis on safety and training programs. In addition, since 1989 the morale of the employee work-force has been excellent despite the company facing some economically challenging years. Again, the cause-and-effect relationship between these factors and the incidence rate cannot be proven in this study but the noted association is suggestive.

The data in Table 2 shows that the average cost of a workers compensation claim varied dramatically during the study period. Part of this variability can be explained by normal random fluctuations in the severity and cost of individual claims. Since the majority of the costs in any given year are attributed to a small percentage of large claims, and since the large claims occur randomly, we expect to see variable costs in a small sample size. It is our belief then, that part of the fluctuation in cost is explained by the random nature of accidents.

Of equal or more importance, however, we note that the cost per claim dropped in 1989, shortly after the company reorganized its Personnel and Risk Management offices in 1988. This demonstrates to us how internal company organizational factors are important in the cost containment of workers compensation claims. Properly organized and functioning Personnel and Risk Management Departments are a crucial component of cost control.

In 1991, the average cost per claim increased dramatically to a high of $6,503 per claim. Two events occurring simultaneously that might have influenced the cost per claim: In 1991 the visitor industry as a whole, and HOCOH in particular, experienced an economically challenging year. It is possible that this change in economic climate influenced the handling and outcome of workers compensation cases, driving up the cost of claims. For example, during this economically slow period, it was more difficult for the company to accommodate injured workers with modified duty positions; thus injured workers stayed off work for longer periods increasing the indemnity costs. Further, in 1991 the company changed the adjusting service providers for a one-year period. When HOCOH reverted

Table 4.—Average Medical Cost per Claim

Year	Medical Cost/Claim*
1988	1,897.38
1989	1,405.46
1990	1,365.12
1991	2,853.82
1992	1,788.89
1993	1,712.95

*Medical Cost/Claim = $\frac{\text{Medicals Paid + Medicals Reserved}}{\text{No. Claims}}$
Note: Medical costs adjusted by State of Hawaii Consumer Price Index to 1984 values.

to its original adjuster in 1992, the average cost per claim returned to a more normal and expected level. This observed temporal relationship strongly suggests that the quality of adjusting services that are hired greatly influences the average cost per claim.

Table 2 shows that the average cost of workers compensation per employee has been variable. HOCOH has been extremely aggressive in monitoring workers compensation claims, often duplicating the services of a typical adjuster. The internal costs of tracking claims and assisting in their rapid resolution has been considerable and is not reflected in the presented data. Allowance for these costs would greatly change the absolute numbers but not the trends, as the internal costs have remained stable over the studied time period. Since HOCOH's internal costs are not presented in this data, the absolute cost per claim or cost per employee should not be compared to the State or any other employer's cost experience as it would not be an accurate comparison. The trends in costs, however, are accurate and show that HOCOH has had good but variable success in controlling the cost of workers compensation injuries.

Table 3 shows that medical expenses, as a percent of the total workers compensation cost, have increased steadily during the study period. This trend has been well documented in other studies. For example, in 1973 medical costs accounted for only 26.8% of the total workers compensation benefits.[2] Today this figure has risen to 42.5% for the state as a whole.[6] The reason for this continued increase both though out the state and at HOCOH is unclear. One possible explanation is that health care cost inflation has been greater than inflation in the rest of the economy and, therefore, treating injured workers has become relatively more expensive. Although this is an intuitively logical explanation, it is not supported by this company's data. Table 4 shows that, except for 1991, the average medical cost per claim, when adjusted to the State of Hawaii Consumer Price Index, has remained relatively stable throughout the study period. An alternative explanation is that the company's efforts to control costs have had proportionately greater success in limiting nonmedical costs compared to medical costs. This is not unexpected as the company has available many effective ways to control nonmedical costs, such as limiting temporary disability payments by accommodating injured workers in a modified work position, but relatively little influence over physicians' behavior.

As previously discussed, HOCOH's cost of workers compensation increased greatly in 1991. We now see in Table 4 that the average medical cost per claim also increased dramatically (109%) this year. This demonstrates how medical costs increase concomitantly with nonmedical costs when workers compensation gets out of control.

In summary, the data describes HOCOH's experience with workers compensation over the last 6 years. In general, the experience has been good although in 1988 the injury incidence rate was higher than expected, and in 1991 costs were greater than expected. We note that the high injury incidence rate occurred during a period of rapid growth and company reorganization. The elevation in costs seen in 1991 coincided with a challenging economic year and a temporary change in adjusting service providers. Although these relationships are suggestive, they cannot be proven as cause and effect. The most striking relationship is that between the changing of adjusting service providers in 1991 and the escalation of costs seen that year. In our opinion, this strongly suggests the average cost per claim is greatly affected by the quality of adjusting services hired.

Medical expenses, as a percentage of total cost, have increased steadily throughout the study period while the medical cost per claim has remained relatively stable. This trend may be the result of aggressive case management which appears to be been more successful in limiting nonmedical costs compared to medical costs. With less successful case management, as seen in 1991, both medical and nonmedical costs increase.

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News and Notes Henry N. Yokoyama MD

Life in These Parts

Vanity Plates.—Emerald Green Paseo: NO XQSS

Toyota Corolla SW: TRY HRD

Maroon sport sedan: ALYKAT

Bumper Stickers.—"If the answer is Clinton, it must have been a very stupid question." (Reported by **Myron Shirasu**)

Hawaiian Rent All.—"After Ho Ho Ho...It's Owe Owe Owe" (January Sign)

"**Wrong End**" (Original version by Larry Winters) "During a two-week vacation by my partner, Lou, I was swamped with patients. We had seven examining rooms and since there was an epidemic of strep throat going around, I spent most of the day running from one room to another examining throats. I must have looked into 50 throats at least, on one particular day.

"At the end of the day about 7 pm, I walked into the largest examing room to find a woman up in stirrups for a pelvic examination. Tired and harried, I put on my headlamp, pulled up a stool, put on my sterile gloves, put two fingers into the vagina, depressed the perineum, peered inside and said, "Say aaah, please."

"The patient, of course, reared halfway to a sitting position and shouted, 'What?' Red faced, I had nothing to say except to apologize."

"Dear Henry,

With reference to the anecdote '*The Wrong End*' appearing under *News and Notes* in the January HMJ issue, I am enclosing the original version. It was not a joke, but an embarrasing incident that happened to me in Walnut Creek, California in 1954. I did describe the incident in some writing I did later.

"Much to my surprise, I saw the paragraph described by some unknown person in Sun City West, Arizona. I know exactly how the story got there. One day on the golf course I related the story to my golf group. One of the group moved to Sun City West shortly thereafter and apparently passed it on to his golf group and eventually arrived here from a 'William Calderwood', whoever that is.

Sincerely,
Larry Winters"

Oncology Conference

Gordan Nakano presented his case: A 69-year-old woman who in 1986 had a Rt breast lumpectomy and axillary node dissection (but no follow-up radiation therapy). She had a recurrance in 1988 and had a radical mastectomy followed by radiation in 1991. She recently presented with a Rt axillary mass; CT and MRI scans revealed possible rib and liver mets.

Visiting pathologist **Tom Kobara** was filling in for **Larry McCarthy**. Tom described slides showing axillary fat and lymph nodes with mets. Viz no lymphoid structure, but infiltrating lobular CA in which the cells lined up in "Indian filing." Tom mentioned that lobular CA had a 5% recurrence rate. Apparently 16 of the 18 nodes harvested were positive. The question was whether the axillary dissection was a "node sampling" or "node dissection."

Surgeon **Bob Oishi** declared that "node sampling" was no longer in vogue and he usually did a Level II or III node dissection. Bob added that lumpectomy without radiation had a 40% breast recurrence rate, lumpectomy with radiation had a 12% breast recurrence rate and that total mastectomy had a 6% to 8% chestwall recurrence rate.

Moderator **Ken Sumida** declared that the landmark 1977 studies showed that lumpectomy with radiation was equivalent to radical mastectomy in survival rates.

Radiotherapist **Vince Brown** mentioned that locally the trend was for lumpectomy with radiation. **Tom Kobara,** who lives in Washington and covers six hospitals, declared that he doesn't see lumpectomies because in the northwest surgeons did fine needle biopsies in their offices followed with radical mastectomies. Vince elucidated that cosmetic breast surgery with radiation was more in vogue in the northeastern states.

Ken turned to chemotherapist **Kaye Kawahara**, "How about adjuvant chemotherapy?" Kaye was realistic: "She'll die from her breast cancer." And had nothing to offer.

Ken turned to **Dennis Wachi** who commented, "Tough case." Dennis suggested a follow-up CT scan in 6 or 8 weeks to see if the nodes enlarge. Then consider adjuvant chemo. **Ken Sumida** summarized the status."So we evaluate the rib and liver, and do we give adjuvant therapy now or later?"

Tom Kobara, the pathologist, added, "The first slides were read as lobular CA; the second series were called ductal CA; and the third series were labeled adeno CA. But with the "Indian filing" cells, I am calling all three specimens infiltrating lobular CA."

Conference Notes

"STDs in Women," a lecture by Hugh Hunter Handsfiled, Prof of Medicine and Adjuvant Professor of Epidemiology at U of Washington, on February 3, 1995. QMC-UH Friday morning conference.

"STDs are Sexist"

- Transmission efficiency greater from men to women than the reverse.
- Women more commonly asymptomatic and have nonspecific symptoms fostering delay in seeking care.
- Diagnosis more difficult in women—signs less clear
- Complications more frequent in women—more likely longlasting or permanent.

Epidemiology of Chlamydial Infections

- Sexually transmitted.
- U.S. incidence: 3 to 4 million cases/year.
- Comparison with gonorrhea
 - -Incidence 2 to 3 times greater.
 - Prevalence 6 to 10 times greater.
 - Broader socioeconomic spectrum.
- Nonspecific urethritis is chlamydial and associated with chlyamydial conjunctivitis.

Antibody to Chylamydia trachomatis in Infertile Women

- Tubal infertility: 70%
- Non-tubal infertility: 30%
- Also high titre in ectopic pregnancies

Recommended Chlamydia Screening in Sexually Active Women

- Age 20
- Ages 21-35+
 - New partner q 2 mos
 - 2 or more partners q 2 mos
 - Other partners
- Recent STD
- Signs and Symptoms of STD

Cervical Chylamydia Infections in Prenatal Patients

- 80% to 90% proven infections
 - PCR = 90%+
 - Culture = 60%

STD Clinic (1043 men)

- Urine LCR = 90% (Both symptomatic and asymptomatic)
- Urethral LCR = 60% (symptomatic)
- Urethral LCR = 40% (asymptomatic)

Treatment of Uncomplicated Chlamydial Infections (1993)

- Regimen of Choice
 - Doxycycline 100 mg bid for 7 days
 - Azithromycin 1.0 gm single dose
- Alternative
 - Erythromycin 500 mg qid for 7 days
 - Ofloxacin 300 mg bid for 7 days
- Infection in Pregnancy, Erythromycin Not Tolerated
 - Amoxicillin 500 mg tid for 10 days
 - Azithromycin 1.0 gm once

PID

Incidence: More than 1 million cases each year

Sequalae (25%)

- Infertility 12-50%
- Ectopic pregnancy
- Chronic pelvic pain (18%)

Risk Factors for PID:

- Sexual behavior: number of partners
- Young age
- Contraception: IUD increases risk
 BCP decreases risk
- Previous PID
- Low socioeconomic status
- Vaginal douching

(PID and vaginal douching: 2 to 4 times greater risk. Vaginal douching is not effective for treating or preventing infections).

****Vaginal douching is contraindicated in sexually active women.*

CDC Diagnostic Criteria for PID:

- Minimum Criteria
 - Low abdominal tenderness
 - Adnexal tenderness
 - Cervical motion tenderness

- Additional Criteria
 - Temp over 38.3 C°
 - Discharge
 - High ESR
 - High C-Reactive

PID Causative Organisms:
- Chlamydia: 30%
- Gonorrhea: 27%
- Anaerobic & facultative organisms: 60%

CDC Treatment Recommendations:
- Inpatient Treatment:
 - Cefoxitin 2 gm IM with probenemid PO
 - Ceftriaxone 250 mg IM or other parenteral 3rd generation cephalosporin plus Doxycycline 100 mg bid for 14 days
- Outpatient Regimen:
 - Ofloxacin 400 mg bid for 14 days plus Clindamycin 450 mg qid for 14 days or Metronidazole 500 mg bid for 14 days
- Adoptive Measures:
 - Remove IUD
 - Analgesics
 - NSAIDS
 - Abstinence

Recommended Healthy Life-style:
- No smoking
- Low fat, high fiber diet
- Exercise
- Avoid trauma
- Limit alcohol and drugs
- Safer Sex

Miscellany

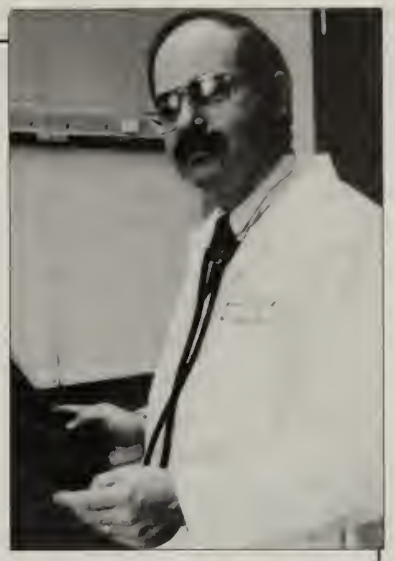
J.D. learned he had a terminal illness. In his lifetime, he had often bribed his way to wealth. So now faced with life after death, he decided a cash donation may help him get past the Pearly Gates. He summoned three friends: A lawyer, his personal physician, and his parish priest. He handed each an envelope with $30,000 cash which was to be placed in his coffin at the funeral. Several months later, J.D. died. After the service, the three friends met and compared notes.

The priest confessed, "I have committed a terrible sin. The church needed a new roof so I put only $20,000 in his coffin."

The physician explained, "The hospital needed a new diagnostic scan which could have saved J.D.'s life, so I really put only $10,000 in his coffin."

The lawyer was furious, "How can you! This is outrageous! I am embarrased for you. I put my personal check for the entire sum of $30,000 in the coffin."

(An embellished version of a joke told by Rodney Williams, MD, JD at the Hepatitis C Symposium on Feb 11)



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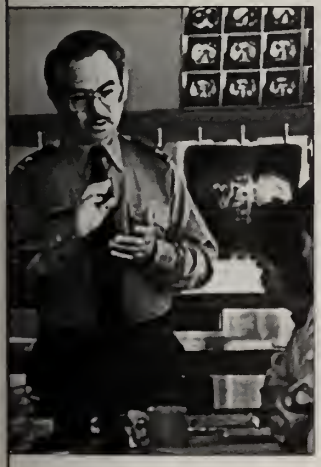
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The Weathervane Russell T. Stodd MD

"The most important fact about the managed-care insurance system is that it is profit-oriented."—Arnold Relman MD

This report from Sherlock Co., 1994.—For-profit HMOs' average performance for 1994 showed operating income up 48.4%, revenues up 30.3%, membership up 25%, stock appreciation up 35.6%. It should not be difficult for physicians to figure out just who provided these handsome returns for the entrepreneurs. All medicine needs is more sky-is-falling MDs to rush to provide cut-rate capitated care, and big business will have accomplished what Hillary and Ira Magaziner failed to do; that is, erase the freedom for both patient and doctor.

Round 'em up. Give 'em a fair hearing. Hang the guilty rats.

State medical boards are cracking down. In 1993, across the country 3,707 complaints against physicians were investigated, which is a 10% increase over 1992, and the largest annual total ever recorded. In 80% of the cases, the boards sanctioned the doctors and punitive actions ranged from formal reprimand to loss of license. Seven physicians were disciplined in Hawaii in 1993.

If at first you don't succeed, transform your data set.

It has often been noted that record tampering or altering medical documents is a big time no-no, for many reasons. In Michigan if a physician is sued for malpractice, and evidence is found that the records were altered, the state is likely to bring criminal charges. Two doctors have been so charged and others are under investigation; a conviction could result in a jail term of four years and loss of license.

The idea is to die young as late as possible.

Now for only $57 you can purchase the U.S. Public Health Service's 400-page text for clinicians that describes the basics of preventative medical services. It will be used to educate medical students and to instruct current primary-care providers. Write to the Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250. This brings to mind a medical conference in which a politician was lecturing to physicians on the necessity for teaching our patients good health practices in order to reduce medical expenditures. One experienced physician stood up to challenge the pol by pointing out that the 44-year-old man, overweight, a smoker who dies behind his lawnmower does much more to reduce the cost of medical care than the 85-year-old clean-living man, rusting away in an extended care facility, slowly dying of nothing at all. As Charles DeGaulle said, "Old age is a shipwreck," and as one of my elderly patients said, "these golden years are not for sissies."

This is the way. Walk ye in it!

Our American Academy of Ophthalmology Ethics Committee has produced a manual, "The Ethical Ophthalmologist: A Primer." The authors' intent is to promote discussion and understanding of the ethical issues that confront ophthalmologists. The text emphasizes practical approaches to common ethical problems, and each of the 12 chapters presents a case-study approach. The manual is loose-leaf in format, apparently to allow for additions, modifications and future ethical changes. Why didn't Hippocrates think of loose-leaf ethics?

I read the newspaper avidly. It is my one source of ongoing fiction.

Perhaps you found in our daily theater of the absurd called the "media" that doctors negligence kills 80,000 patients a year. *Consumers Union*, *Public Citizen*, American Association of Trial Lawyers, and Pete Stark all claimed to be quoting a Harvard study. In fact, the Harvard School of Public Health studied a random sample of 30,000 patient discharges in one year, 1984, from 51 representative New York hospitals. A team of nurses and administrators came up with 7,743 "adverse events" which were evaluated by physicians. They found "evidence" of negligence in 280 cases (less than 1%) of which 60% were considered minor injuries (no definition of hospital, patient, or physician negligence was noted). The rest were serious injuries, including 71 deaths. Extrapolating from these data, the researchers came up with nationwide estimates of 80,000 to 90,000 deaths and 150,000 to 300,000 injuries due to medical negligence. As the saying goes, there are lies, damn lies, and statistics.

People become progressively less competent for jobs they once were well equipped to handle.

There are doctors, and there are doctors. If the cruel world of managed competition, litigious patients, mounting paperwork, hospital committees, CPT codes, OSHA, ADA, RBRVS, etc, pushes you to the brink, do not despair—other vistas may beckon. Some MDs have found great success outside of the field of medicine. Ophthalmologist Jules Stein soon found that he could command much greater return for his talents by working in the entertainment world—result, Music Corporation of America. His generosity and foresight resulted in the excellent eye institute that bears his name. Another eye surgeon of bygone days, A. Conan Doyle, created the world's most renowned detective, Sherlock Holmes. Holmes lives on in legend, story and song. And a more recent ophthalmologist author, Robin Cook, interned at Queen's Medical Center before turning his skills to literary composition. There are many others who were educated in medicine but chose instead to work in other areas: Armand Hammer, Michael Crichton, and Peter Mark Roget, creator of *Thesaurus* (a Greek work meaning treasure), first published when he was age 73, to mention just a few.

Equality may be a right, but no power can ever turn it into fact.

Notable also about physicians is that 9 of 10 office-based doctors have health insurance through their practices. However, less than half of self-employed doctors offer coverage to their employees, according to *Money* magazine. The reason most often stated was that they can't afford to offer health coverage and still make a profit. Would doctors be so parsimonious?

Addenda

- There's only one thing that can kill television—education!
- The Democratic Party has been Newtered.
- A broker is a man who takes your fortune and runs it into a shoestring.

Aloha and keep the faith—rts

■

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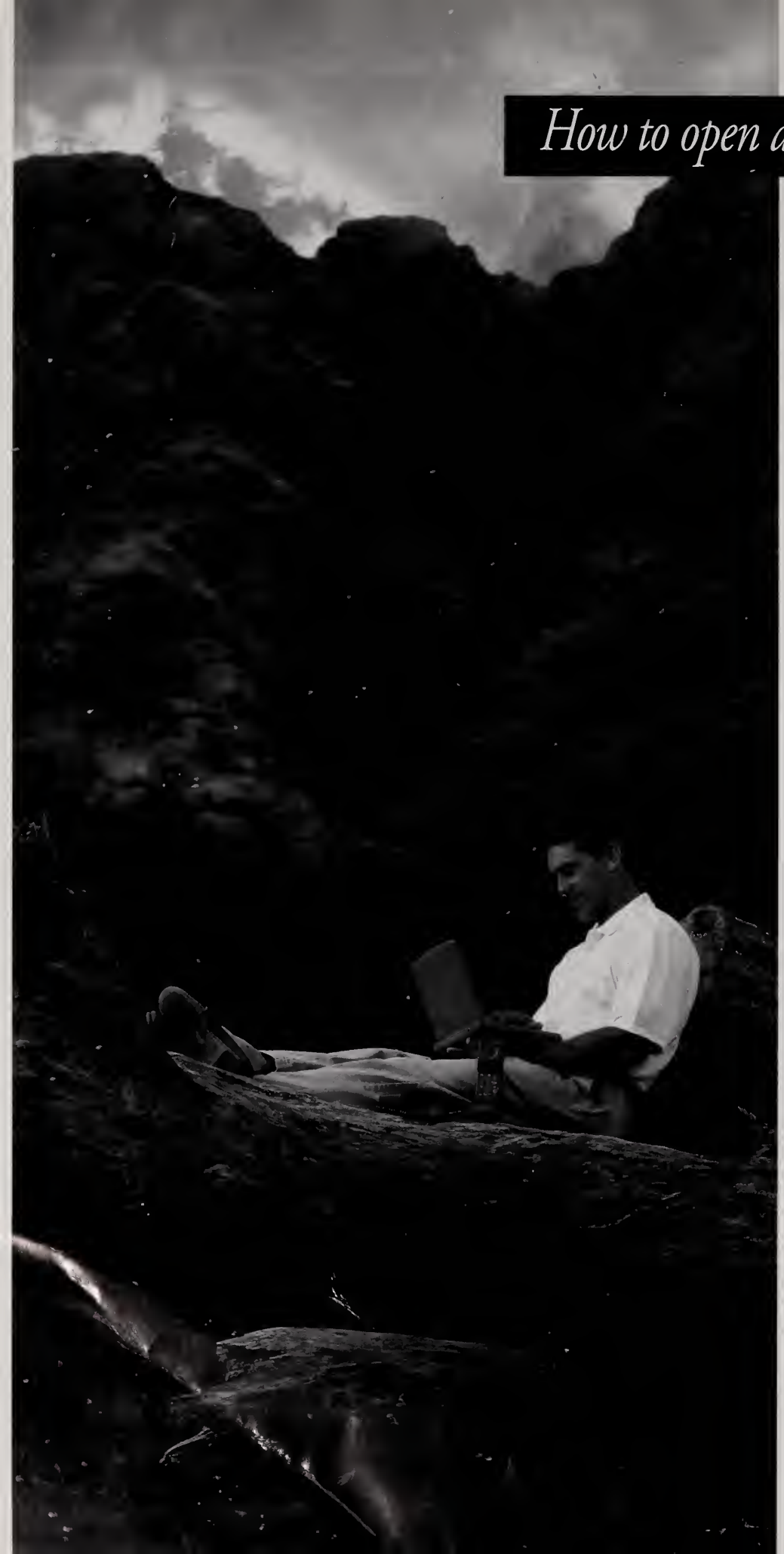
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The Art of Making Canoes

The art of making canoes involved much ritual and ceremony and was the exclusive domain of men.

It was, however, the goddess Hina who presided over the ritual of selecting a proper tree and laying out the vessel.

When Hina assisted canoe makers she took the name *Lea* and assumed the form of an *elepaio* bird. This bird has a voracious appetite for tree-boring insects and flies. If the bird pecked on a tree, canoe makers would know it to be fouled by insects or worms; they would not cut such a tree.

The positioning of the bow and stern of a canoe would also be determined by the habits of the bird. Where the elepaio first landed on the felled tree was to be the bow. Where the bird walked thereafter would be the stern.

In Memoriam— J.I. Frederick Reppun MD

On March 15, 1995, Destiny dealt a fatal stroke by snatching from us our dear colleague, a compassionate physician, and a pillar of our community.

J.I. Frederick Reppun, 81, a physician who practiced medicine for more than half a century, continued to treat patients until March 10, 1995, and made his patients feel special. And yes, even on March 10, 1995, his patients found comfort and hope in his caring.

Truly a family physician he was! He ministered to children, adolescents, adults, elderly and even delivered babies. While practicing on Molokai, he once delivered twins whose combined weight was 19 pounds!

Dr Reppun was a pioneer in patient care for Windward Oahu. He was one of the founding members and fund-raisers for Castle Medical Center in Kailua where he served as chief of staff.



A man of principles he made a statement when he refused to carry professional liability insurance required as a condition for medical staff privileges at Castle Medical Center, although he continued to see patients in his office.

Our colleague gave his utmost energy to the medical profession. He gave countless hours to the Hawaii Medical Association and worked diligently as the editor of the *Hawaii Medical Journal*. He earned the well-deserved 1974 HMA Physician of the Year award.

Fred's horizons were not limited to medical practice. He had vision for the safety of future generations—he had seen two world wars. He provided the much needed leadership to the Hawaii chapter of Physicians for Social Responsibility to prevent nuclear war. He collaborated with physicians in the United States and other countries and invited physicians from Russia to give lectures on the effects of nuclear disasters.

Fred was a family man: A dear father of seven children—Martha, Charlie,Tom, Paul, John, David, and Josh—and a loving grandfather to nine. For many summers, he took some of the children and grandchildren on vacation to Kalihiwai Beach on Kauai where he provided a true sense of family to the children and grandchildren.

Fred was a community man. He gave his time to young children interested in a medical career and encouraged them by sharing his personal experiences and the valuable insights of his life. His son John derived inspiration from his community work and assumed a leadership position to save Heeia meadowlands in Kaneohe. Sons Charlie and Paul joined John to keep Waiahole Valley water on the Windward side and not diverted to the Ewa Plain.

What a profilè in courage! He recently had back surgery to repair a long-term injury from a fall from a ladder. Wow! Within four days, he left the hospital to return to his home and continue his daily activities, including consulting some patients, and yes, he did walk on March 14, 1995.

Fred had fulfilled his purpose of life. It was a stroke of Destiny that took his wife Jean from him in 1981, exactly 15 years to the month prior to his own death, and now another stroke of destiny took him away at 81 years of age.

Oh dear colleague—painfully, we miss you. Affectionately, we remember you. Fondly, we will continue to be inspired by your deeds.

Krishna Kumar MD

Fred Reppun MD is Gone

The *Hawaii Medical Journal* has lost it's past editor (1985 to 1993) and a good friend and supporter of the *Journal* for many years.

When I assumed the editorship of the *Journal*, Fred warned me "it would be a lot of work" and he was right. But he encouraged and supported me and our staff "to keep the *Journal* going," and we are—thank you, Fred.

We are not able to publish Fred's last commentary in this issue of the *Journal*; "The Physician as Patient: The Thallium Treadmill Stress Test" will appear in a future issue. Fred sent it to me one week before he died—in his sleep at his home—as he wanted.

Mahalo nui loa and aloha, Fred.

Norman Goldstein, Editor

Editorial

Words of Wisdom
April 1995

This issue of the *Hawaii Medical Journal* has many words of wisdom. Words from the best minds in the medical and legal professions in Hawaii. Words from physicians who practice medicine, words from physicians who are lawyers and practice medicine, and attorneys who advise, consent and, at times, defend physicians. We also have excellent manuscripts by philosophers and theologians. The manuscripts by George Burnell MD and S.Y. Tan MD, guest editor for the special issue, are especially poignant.

Many thanks to the authors, their secretaries, the Hawaii Medical Library, and the Richardson Law Library staffs.

My deepest appreciation to S.Y. Tan. This special issue will serve as required reading for our medical students and our law students. *Mahalo nui loa*, S.Y.

Norman Goldstein MD, Editor

Historical Notes

John A. Breinich
Executive Director
Hawaii Medical Library

Medical ethics codes have a very long history dating back about 2000 years to the Babylonians and the Code of Hammurabi, the earliest written code of ethics. This was a code of conduct for physicians dealing with surgical procedures and with details of the penalties for various offenses.

Hippocrates was born in 460 BC on the Greek island of Cos. The oath bearing his name was probably not written by him, but rather by the Pythagoreans, a philosophical sect started in the latter part of the fourth century BC. A Christian version of the Oath was written in the tenth or eleventh century AD to eliminate references to pagan gods. Today, the English version of the original Oath is most frequently used and quoted.

Many codes have been written over the centuries, but the contribution of Thomas Percival (1740-1804) is perhaps the most significant. He was an English physician, sociologist, and philosopher whose 1803 treatise was a prototype for various codes of ethics, and particularly influenced the code created at the first official meeting of the American Medical Association in 1847. The AMA code has changed over the years to reflect changes in language and ideas with major revisions in 1903, 1912, and 1947, but the basic structure and philosophy were still based on Percival's Code. In June 1957 a major revision of the Principles was adopted consisting of 10 short sections with a preamble, significantly changing the format of Percival. In 1980, the AMA adopted a revised Principles of Medical Ethics to update language, remove references to gender, and seek to balance professional and legal standards.

The earliest reference to a code of ethics for Hawaii physicians was reported by Dr Harry Arnold in the *Hawaii Medical Journal* (1956;15). In 1895 the Medical Society of Hawaii reactivated and adopted the Principles of Medical Ethics of the AMA. It is unknown whether the Society that was founded in 1856 ever had a formal code of ethics. The Hawaii Medical Association has traditionally adopted the American Medical Association's Principles of Medical Ethics as the code for Hawaii.

Medical School Hotline

The Role of Ethics and Law in Medical Education

S.Y. Tan MD, JD
Professor of Medicine and
Adjunct Professor of Law
John A. Burns School of Medicine
University of Hawaii

The new intern approached the bedside of his assigned patient, an 85 year old in the intensive care unit. The senior resident barked "...keep her alive, no case is ever hopeless. That's what the attending and the family want." What faced the intern was a limp, frail woman with multi-organ failure, paralyzed by the hemorrhagic stroke that brought her to the hospital three weeks before. He quietly counted the tubes attached to her body: A nematode-like plastic leading to the respirator, three intravenous lines, a foley catheter, an arterial line, a naso-gastric tube.

And now she needs a chest tube; a pneumothorax had developed overnight, presumably from the increasing PEEP her ventilator was calibrated to deliver. The intern wondered who would sign the consent form, then quickly dismissed the thought since he knew she would surely die without it. None of the doctors had tried to find out what the patient's preferences were.

The above scenario plays out daily across the nation's ICUs. Physicians, many still in training, are called on to make decisions with grave ethical and legal implications. Who gives consent for a medical procedure when the patient is unable to communicate? When can treatment be stopped in order to allow a peaceful death? Is letting go the same as physician-assisted suicide, or active euthanasia, and what does the law have to say about this? Is there a duty to perform CPR in the event of a cardiac arrest?

These are relevant and serious questions that touch on life-and-death as much as a decision regarding surgery or blood transfusions. Doctors face other equally important ethical questions that speak to competence, credibility, and integrity; in short, professionalism. Examples are the physicians' ethics in dealing with the pharmaceutical industry, their conduct in scientific research, their approach to impaired colleagues, and their resolution of conflicts of interest in the course of practice.

Ethics ought to be therefore an integral part of the curriculum in medical schools and in postgraduate residency programs. Medical students and young doctors need to learn how to recognize and competently analyze ethical problems, and when to ask for consultative assistance. Many bioethical issues are of

recent vintage, a result of our new technology that keeps patients alive, though not necessarily well. Sometimes the ethical dilemmas are not easily solved, but the need to address the issues remains. At a minimum, this will lead to better and open communication. Doctors-to-be must be equipped with analytical tools to tackle new ethical issues. Already, questions of confidentiality, privacy, and choice surrounding informatics, the new genetics and managed care increasingly confront us. Some of these issues will tear at the ethical fabric of the physician-patient relationship, pitting duty to patient against responsibility to society and third-party payers.

Physicians should also be aware of the positive role that the law plays in medicine—that of ensuring quality and affordability of care, access, and patient autonomy. Because of the ever-present threat of a malpractice lawsuit, beleaguered doctors understandably view the law more as a hindrance than a help. Health law covers more than just malpractice litigation; it also addresses antitrust, statutory regulations such as those governing patient transfers, access, and HIV-infections, peer review and credentialing activities. Hospital law is another specialized area. Finally, it is American law, more so than medicine, philosophy or theology, that drives American bioethics. It can be reasonably concluded that a case-oriented course in legal medicine will be both attractive and useful to all students.

At the University of Hawaii John A. Burns School of Medicine, the problem-based learning (PBL) curriculum readily admits the discussion of ethical issues within the medical problems that students are required to work through. Such issues are introduced into case discussions. Junior and senior students also employ problem-based learning modules during their clinical rotations. There, students debate real-life ethical issues under the guidance and facilitation of a faculty member. Residents and students also participate in lectures, seminars, case discussions, and bedside rounds that regularly feature bioethical and legal questions. Finally, trainees are encouraged to access hospital ethics committees that convene to resolve difficult treatment decisions.

There is more to be done. For example, a center or department of ethics and health law could be established. Such a structure will better coordinate, review and expand the ongoing educational activities. It can pool and focus community resources to foster academic growth, including research. It can tap the faculty in the academic community such as law, nursing, the humanities, and public health. Such integration augurs well for a discipline that transcends traditional pedagogical lines, with promise of academic richness and rigor. The patients will be the ultimate beneficiaries when the school of medicine and its teaching hospitals work together to bring clinical ethics to the bedside.

Multiethnic Hawaii serves as an ideal research laboratory for the study of trans-cultural bioethics and law. This should attract visiting bioethicists from around the world to conduct collaborative studies at our medical centers, thus enhancing our own research and development.



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HMA Alliance

Legislative Watch
Scott Carrothers
Legislative Chair, Hawaii County Medical Society

Health care reform is not dead! Nineteen ninety-five is going to be an interesting year to say the least. The mad rush is on to submit bills and changes that will affect important aspects of health care and physicians, most notably in the areas of QUEST and workers comp reform.

There have been more than 25 bills introduced this session regarding workers comp, some with just a few sentences, others with stacks of pages. The general trend is to look at ways of "managing the medical costs" as they are among the highest. On Saturday, February 4, there was a public meeting on workers comp reform. Naturally the unions, insurance companies, and the Chamber of Commerce were all well represented and expressing their views. At this time I don't have any information about who was representing physicians or HMA, nor what was voiced.

QUEST membership continues to grow beyond the original projections. There are now more than 120,000 covered by QUEST as compared to the original estimated 110,000. There continues to be approximately 2,000 applicants per month with only approximately 1,000 applications being processed creating quite a backlog. Funding will be a problem as enrollment continues to grow above projections, especially in light of the existing budget constraints. Consequently, the next phase of QUEST to include the aged, blind and disabled (originally estimated at approximately 30,000) which was supposed to occur in 1996 has been shifted to 1997.

Another bill in the works but not yet submitted proposes to change the pharmaceutical laws regarding prescription-dispensing authority. This is a revised strategy from last session's failed attempt to authorize nurses' prescription authority, but may open a Pandora's box in several areas, not just with nurses.

There is also a bill awaiting submission requiring an annual audit of HMSA, which is sure to provide interesting debate.

Senator Andy Levin introduced Senate Bill 1674, an Omnibus Bill, relating to community hospitals' autonomous operation. The HMA and HCMSA have voiced their support of this bill to provide more autonomy for Hilo Medical Center.

On February 7, members of the legislature met to address some of our concerns. It's obvious, though, that there are many possible changes coming down the road, and not all of them good for physicians or their patients. The better informed, better organized, and better prepared we are, the better our chances are of protecting our own interests and the interests, health and welfare of those we are pledged to serve—our patients. It will happen only if we get involved!

The AMA Alliance Confluence: 1995
Verna Lau, President-elect

The AMA Alliance Confluence was held on January 27 to 31 in Chicago. Medical Alliance representatives from the county and state levels were able to meet one another and national representatives. This meeting proved to be four days of opportunity for state and county medical alliance members to share their ideas and feelings regarding legislative issues, health projects, and membership dilemmas. Confluence representatives were showered with kindness and generosity from the national board members and Alliance staff members. This was a great way for local and state members to gain exposure to the hardworking and influential organization.

Both state and county Alliance members were assigned to workshops on managerial and health-related issues. These included parliamentary procedure, domestic violence, time management, creating healthy educational programs, legislative updates, speech preparation, AMA-ERF updates, and the latest news from the strategic task force.

The highlight of the Confluence was probably the exhibit fair. Each state had the opportunity to share its special health project and/or Alliance-related activities. A great deal of pride was generated by these Alliance members as they shared their ideas with other state Alliance representatives. There was an overabundance of positive energy that filled the atmosphere during the course of the Confluence. It's probably comparable to having a battery charge. This motivated the local and state representatives to take back to their respective committees a bit of the positive energy and a lot of ideas.

Book Review

Legal, Ethical, and Political Issues in Nursing
Tonia Dandrey Aiken RN, BSN, JD with Joseph T. Catalano RN, BSN, PhD, CCRN. F.A. Davis Company, Philadelphia, PA 19103. ISBN 0-8036-0081-X

Legal, Ethical, and Political Issues in Nursing is a well-written book that could serve either as a text for the classroom or a reference book destined to be dog-earred and often borrowed. It is well researched with many contributors from nursing and law, balanced with nursing educators and administrators as consultants.

The book presents a basic description of the law and details those aspects of the judicial system with which many health care providers will become all too familiar. The author's intent is to educate students and practicing nurses with legal, ethical, and political issues that affect their practice and profession.

Each chapter is illustrated with case examples, practice tips, and highlighted boxes of important information. A summary, study questions, and points to remember follow. The chapter concludes with "Ethics in Practice," a four or five-paragraph ethical situation the reader is to work through using ethical decision-making concepts. The problems presented are those a nurse might confront in everyday work life.

In addition to a specific chapter on the law and ethics, the book devotes chapters to such topics as: Standards of Care, The Nurse and the Lawsuit, Informed Consent, Common Causes of Negligence and Liability, International Torts, Professional Liability Insurance, Liability of Nursing Supervisors, Hospital Liability and Employment Issues, Contracts, and Documentation. The

Appendices provide a good treatment of Lobbying, the Americans with Disabilities Act, and Harassment and Discrimination.

An instructor's manual is available with case examples and charts for classroom discussion, examples of legal pleadings, and test questions for each chapter.

Legal, Ethical, and Political Issues in Nursing is a book that I recommend for use in nursing education programs as well as for purchase by health care professionals looking for a good resource.

Reviewed by Rene McWade RN, MEd, JD

■

Rene Y. McWade is an attorney and a registered professional nurse. A graduate of the University of Hawaii William S. Richardson School of Law, she received her BSN degree from the University of Hawaii School of Nursing, and obtained her master's degree in education in health, physical education and recreation from Colorado State University. She is currently Administration Risk Manager for the Division of Community Hospitals, Department of Health, State of Hawaii.—ED

HMA President's Message

Frederick C. Holschuh MD

Although I have not read the articles, I have looked over the titles of the presentations for the special issue of our *Hawaii Medical Journal* on medicine, law and bioethics with guest editor S.Y. Tan MD. It appears to be an impressive collection of articles.

We are faced with decisions daily regarding the end-of-life process. We, as the leaders in the health care team, need to make decisions for families easier by participating with them in an honest and involved manner. We can't put the burden of end-of-life decisions solely on loved ones by saying, "What do you want us to do?"

In my 24 years of emergency medicine practice, I have been saddened by our inability as physicians, the leaders in health care expertise, to effectively deal with the dying process. Over the past seven or eight years, I have developed a system that works well for me regarding continuing resuscitation or code status. As soon as the rescue unit arrives with a futile code, after a quick look, I talk with the family to prepare them for the potential of death. I then continue the attempt at resuscitation as medically indicated. When it is time to stop the resuscitation efforts, the family has been prepared and we can make a sensible, joint decision.

It is critical for doctors *not* to ask, "Do you want us to 'Do everything' for your dad?" No family can say no. We can very honestly and effectively assist them by explaining to them what the do-everything approach really means in a futile code. We should also give compassionate advice on the decision and not expect them to make it alone.

Over a number of years I have also asked family members if they wish to be with their loved one when we stop resuscitation. If they choose to do so, we will cease CPR and turn off the monitor in their presence. This has been a very uplifting experience for families, and I must admit an emotional one for the emergency department team and for me.

I had a very interesting experience a year or so ago where the MICTs brought in an elderly, chronically ill woman with full CPR in progress. When the daughter and others arrived (the primary caregiver had not been home), they presented her living will stating *No CPR* and a durable power of attorney. Her request was to die in her home. We stopped everything, pulled all the tubes, and she went home in a private car and died peacefully. I pronounced her dead about three hours later when she was returned, and the family was very grateful that her wishes had been honored.

I recently mailed out the AMA Council on Ethical and Judicial Affairs report regarding ethics and managed care. I hope everyone will pay close attention to these principles as changes in health delivery occur.

In this regard, my old friend and former Queen's house officer, Dr Robin Cook wrote a book on managed care entitled *Fatal Cure*. Although a bit sensational, it is interesting reading and raises some very provocative questions. One quote from the book: "I'm afraid the major concern is the bottom line on the balance sheet, not patient care."

Let's make sure in all of these discussions that the overriding concern of all of us is the very best care for our patients. Thanks again to Dr Tan and the other authors on behalf of all of us in HMA.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Widespread *right sizing* of governmental organizations has begun to take effect within military medicine. The Department of Defense will respond to congressional mandates over the next few years to streamline medical services with a variety of strategies. Current mandates are to provide care to active duty troops during times of both conflict and peace, for the families of the active duty troops, and for the retired soldiers who served in military careers. To accomplish this mission there is a network of facilities from small clinics to large tertiary care hospitals throughout the world. In the Pacific theater there are facilities in Japan, Korea, Thailand, Okinawa, Guam, and Hawaii, with Hawaii facilities serving as a referral center for this network. There undoubtedly will be a significant change in the way medicine is practiced in the military, and in Hawaii's military medical facilities as right sizing proceeds. The Army projects a decrease in active duty physicians from more than 5,000 to about 3,700 within 3 or 4 years.

Hawaii is a trial site for one strategy to effectively downsize medical capabilities in concert with the rest of the defense structure of our nation. We have embarked on a project of enrolling Champus-eligible dependents in *Tricare,* a managed care system of cost sharing and cost shifting in which primary care will be provided by a network of civilian providers. Spe-

cialty and subspecialty referrals will be made to civilian providers when services are not available within military health care facilities. These providers will be our colleagues in the community, with whom military physicians will develop close working relationships.

Another strategy that will permit downsizing of the military medical capability includes reduction in the number of graduate medical education programs, which have been a source of career officers for many years. Graduate medical education in the U.S. Army has been shrinking for the past few years and many fellowship and residency programs have closed. All fellowship programs will be relocated to Washington DC or San Antonio, Texas within the next few years. Tripler Army Medical Center has been fortunate to retain its full compliment of medical, pediatric, family practice, surgical, obstetric/gynecology, radiology, and psychiatric training programs. The pathology residency at TAMC will not be enrolling new residents this year, our only casualty.

As we enter this new era of military medicine, it is likely there will be consolidation of services across services. Tripler has been a test-bed of cooperative efforts in this arena. Navy and Air Force physicians are assigned to TAMC in the departments of surgery and psychiatry. This trend is likely to continue, with increasing numbers of the Army Medical Center's physicians emanating from other services. Likewise, the Army has begun assigning physicians to Air Force and Navy facilities in an effort to most-efficiently utilize the resources of the combined medical corps.

In Hawaii we look forward to the growing professional relationships that will undoubtedly result from the Tricare initiative. We will share in the care of patients and develop closer relationships with our civilian colleagues.

Food for Thought

"Commonly physicians, like beer, are best when they are old; and lawyers, like bread, when they are young and new."

Thomas Fuller (1608-1661)

The views expressed in this article are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.



With the accelerating dynamics of computers and insurance billing, it made good business sense to work with Praxis. I did not want to worry about costly program upgrades, outdated technology, and the increasing flood of paperwork. Moreover, I was better able to manage our staff and focus them on patient outreach and education. A Praxis account manager is accountable to me and provides me with the information and control I need to run our clinic efficiently. The collective expertise of the organization and their vested interest in my success has been invaluable.

–Keith Katano,
Group Administrator,
Medical Arts Clinic

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HMA Council Highlights

March 3, 1995
Roger T. Kimura MD, Secretary

The HMA Council meeting was called to order at 5:42 pm by Dr Frederick C. Holschuh, President.

Members present were Drs F. Holschuh, President; C. Lehman, President-elect; R. Kimura, J. Spangler, A. Don, A. Bairos, W. Chang, P. Chinn, W. Dang, Jr, W. Dang, P. DeMare, C. Goto, G. Goto, L. Howard, S. Hundahl, M. Joshi, C. Kadooka, C. Kam, J. Kim, A. Kunimoto, J. McDonnell, B. Robinson, M. Shirasu, B. Shitamoto, T. Smith, R. Stodd, K. Thorburn, S. Wallach, Legislative Chair J. Lewin, and HMA outside counsel Vernon Woo.

Guests were Messrs Marvin Hall, Robert Hiam and Bernard Ho of HMSA and Ms Susan Johnson, a private consultant for Queen's and Kuakini Medical Centers.

Staff members present were J. Won, B. Kendro, L. Tong, J. Asato, J. Estioko, P. Kawamoto, and Recording Secretary A. Rogness.

Dr Holschuh reported he is paying his own way to Ponape to represent the HMA at a conference. Many years ago, Mr Won and a few physicians were invited to Ponape to help establish the Micronesian Medical Society based on the HMA Charter and Bylaws. Over the years the Micronesian Society dwindled and the documents were lost. Dr Holschuh was invited to Ponape and will take another copy of the HMA Charter and Bylaws to help reactivate the society.

Actions

1. A motion was passed by Council that the HMA take a grassroots approach and send a brief informational generic letter on workers compensation to members and nonmembers to use to send to legislators.

2. Council approved the Legislative Committee's recommendation to submit the following statement if the issue of the Health Council is heard at the Legislature: The Hawaii Medical Association: 1) wholeheartedly supports the concept of and diligent work of the Vision 2000 program; 2) urges continued efforts to move forward with the planned Health Congress in September 1995; and 3) supports the formation of a Health Care Council under private auspices.

3. Council approved Dr Don's motion, as chair of the IPN Steering Committee, that the HMA Council approve the concept of the joint venture between the HMA and PMAG to establish a statewide IPN and to continue negotiations to finalize the joint venture to be presented to Council for final approval. The written IPN/PMAG joint venture proposal will be sent to Council members prior to the Council meeting to allow for their review. Written material for any important Council agenda items will be mailed in the same way.

4. HMA has been asked by Dr Robert Whang, Assistant Dean for VA Affairs of the John A. Burns School of Medicine to co-sponsor in name only a seminar on alternative medicine to be held in the fall. An agenda/program will be presented to Council before any decision is made whether to support such a seminar. A motion was passed by Council that the alternative medicine seminar consider including some time for opposing views.

5. Council approved the HMA Annual Meeting and Arrangements Committee's recommendations: 1) 1995 annual meeting fees and the proposed budget. (Same fees as 1994; cost of exhibitor booth space will increase from $900 to $950 because of less exhibitor booth space); 2) the 1996 annual meeting is to be held at the Kauai Marriott and Beach Villas (formerly The Westin Kauai), October 17 to 20, 1996. This date will not conflict with other specialty society meetings.

Component Society Reports

Honolulu.—Dr Howard reported 1) the HCMS is working on a generic universal medical ID card designed to be accepted by all hospitals. The HCMS will make and provide the cards as a service; 2) the HCMS is proposing that the HMA and the HCMS combine their efforts and publish one bulletin instead of a separate *HMA Newsletter* and *HCMS Bulletin*. It was pointed out this would save on duplication of information and be cost-effective. There were a number of concerns raised by Council. The issue was referred to the HMA Publications Committee.

Hawaii.—Dr Kadooka reported a membership meeting was held where Dr David John spoke on arthritis at the Hilo Yacht Club.

Maui.—Dr Joshi reported that Dr Schlesinger, co-chair of the Committee on Physicians' Health, will be speaking at the county meeting in March, a cardiologist will be speaking in April, and a talk on new advances in plastic surgery in May.

For Information

HMSA old/new.—Mr Marvin Hall is retiring from HMSA in April and he thanked HMA for the good working relationship between the two organizations. He also introduced Mr Robert Hiam who will be filling his position.

Credential Verification Service (CVS).—Ms Susan Johnson, a private consultant for the Queen's and Kuakini joint venture, gave a presentation on the CVS the two hospitals wish to organize. Her research indicates the feasibility of this service is good. The CVS organization does not exist now and HMA is invited to work with the CVS to work out the details. The HMA will be given a voting seat on the board (no funding required). The intended benefits of this service to practitioners are time saving and convenience. It will be a not-for-profit service and will be funded by the hospitals and the managed care programs. The organization will not assess physicians any fees. The CVS will not be intended to be a reporting or disciplinary body. The purpose of the service is to eliminate the amount of paperwork. A generic standardized application and a single reappointment date for each practitioner will be developed. Dr Holschuh will have discussions with Queen's and Kuakini and get back to Council.

QUEST.—Dr Jim Budde and HMA staff worked on the QUEST survey sent to HMA members. An immediate response has been requested.

Public Relations Committee.—Dr Lehman informed Council 1) that the Distinguished Medical Reporting Awards Banquet will be held on Saturday, April 29 at the Hilton Hawaiian Village, Tapa Ballrooms 1 and 2. Billy Sage will be the master of ceremonies and Marvin Hall of HMSA will be roasted. The tickets are $100 per person or $1,000 per table. 2) The Great Aloha Health and Fitness Expo held mid-February was a success. The Girl Scouts from Kaimuki Christian Church covered the anti-smoking booth and did an excellent job. Another booth presented height and weight. A third booth demonstrated in-line skating safety and HMA raised enough money to buy three sets of protective gear. HMA Drs Carl Lehman, Amy Ebisutani, Roger Kimura, Ron Peroff, and HMA staff donated their time during that busy weekend.

RBRVS.—Dr Kunimoto reported that this is the year for the five-year RBRVS review and AMA is asking for input from medical and specialty societies. The first meeting with specialty societies was on March 3 and the next RBRVS meeting will be held mid-April. The AMA deadline is September when it will deliberate and prepare a report to Congress.



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Bioethics and the New Medicine: An Overview

S.Y. Tan MD, JD

The term New Medicine describes our new age of health-care reform and biotechnological discoveries. While offering hope for a healthier and more productive nation, New Medicine challenges us to come to terms with the cost, the complex social issues resulting from medical breakthroughs, and the limits to autonomy. A simplified ABC overview of some of the many bioethical dilemmas that now confront us are offered in this article.

A is for Affordability

America spends nearly 14% of its GDP on health care, about twice as much as other industrialized countries. Despite expenditures of nearly $1 trillion, some 37 million Americans are without health coverage. Even those who have health insurance are aghast at the high cost of becoming ill.

Medical expenditures continue to mount because of: 1) our aging population, 2) the increasing prevalence of chronic diseases, 3) new expensive medical technology, 4) a demanding citizenry, 5) physicians' practice of defensive medicine, and 6) no personal incentive to minimize expenses. Managed care has been touted as an effective means to contain costs. Capitation will replace fee-for-service. Increased reliance on gatekeeping primary care providers is expected to curtail the overutilization of specialists and expensive testing. Because the incentive is to do less, not more, it is expected that managed care will reduce costs in the short term. What is of concern, however, is whether managed care will reduce the high quality of care that Americans expect and demand.

If we accept that our resources are finite, and medical costs will not abate, then we must accept that we cannot afford all the health care we desire. In order to assure universal access should we resort to rationing? One proposal is to offer a basic package to all Americans irrespective of their ability to pay. Those who want more will bear the added costs themselves. This approach pits the wealthy against the poor, and arguably violates the bioethical principle of distributive justice. On the other hand, if the basic health-benefit package is carefully defined, all patients should enjoy excellent medical care, forgoing only treatment that is experimental, unproven, desperate, futile, or prohibitively expensive.

S. Y. Tan MD, JD is Professor of Medicine and
Adjunct Professor of Law at the University of Hawaii.
He chairs the Ethics Committee at St Francis Medical Center, Honolulu.

B is for Breakthroughs

Medical discoveries are accelerating at a breakneck pace, due largely to breakthroughs in cracking the genetic code. We can isolate and clone genetic material that directs the production of vital body chemicals such as enzymes, hormones, and proteins. The National Institutes of Health are well into their multicenter Human Genome Project; scientists are expected to complete this task by the year 2010. The project maps the entire genetic structure and function of human cells, which will unlock secrets of cellular physiology and pathology. Treatment for once-incurable conditions will swiftly follow by replacing the missing or defective genes.

Gene drugs have apparently cured two young girls with severe combined immunodeficiency and are being used in experimental trials to treat such disparate diseases as cancer, hemophilia, hypercholesterolemia, and cystic fibrosis. In the near future, they will be standard fare in the fight against many other diseases including diabetes and hypertension. A brave new world of medical triumphs will mark the turn of the millennium. But these breakthrough technologies are likely to be expensive, threatening to stretch and strain our finite health care budget. And genetic engineering is likely to create new ethical dangers.

Understanding the genetic code allows us to control not only diseases, but also such things as eye color, height, and intelligence, since these attributes, like all cellular functions and products, are under direct genetic DNA control. Bioethicists are rightly nervous and suspicious about this new power to tinker with nature.

Take height as an example. We would surely welcome a genetic cure for a child stunted by growth hormone deficiency. Currently these children are treated with injections of human growth hormone, with only partial success. It is quite another matter, however, to select out tall progenies by genetic manipulation of otherwise perfectly normal individuals. Tallness is socially advantageous. Sports value it, the sexes crave it, and businesses reward it (six-foot graduates command a starting salary 12.4% more than their shorter classmates). Height even wins presidencies; the taller candidate was victorious in 80% of all presidential elections in this century. Once the height gene is cloned and clinically available, should parents be allowed to opt for taller offspring?

The new genetics will also identify aberrant *gene markers* that can predict a disease state long before it becomes clinically manifest. Such knowledge is likely to invite discriminatory practices in insurance underwriting and in employment. Genetic

testing additionally raises ethical and legal issues of consent and privacy.

Breaking the genetic code breaks the taboo against eugenics, that notorious science of improving the hereditary qualities of the human race. Prudence and history remind us that selfish tampering with nature frequently leads to unintended and undesirable outcomes. What moral code do we adopt to constrain the new genetics? Are we apt to repeat those Nazi experiments in eugenics to produce a superior race? Ethical guidelines lag far behind scientific strides, yet the genetic genie is virtually out of the bottle. Will the glare of its potential for good blind us to the evil it can unleash?

Another technological breakthrough of the New Medicine is the marvelous electronic communication systems that instantly record, collect, store, and transmit information. Medical charts will become obsolete. Poor communication, illegible record keeping, and misplaced prescriptions will thankfully disappear. Patient records will be instantly retrievable, as will the latest in medical research. Patient care will be dramatically more efficient.

But we risk losing the privacy and confidentiality of our medical lives by getting on this electronic information superhighway. The health care system is no longer just doctors, nurses and patients. It is now populated by assorted faceless health plan administrators, third-party payers, governmental agents, and purveyors of medical products. Protecting the confidentiality of these electronic records will require much care, foresight and sensitivity. Irrespective of the safeguards employed, one thing is clear: In the New Medicine, like it or not, many more in the system will know and share our medical profiles.

One other concern. Medical informatics threatens the doctor-patient relationship with its offer to take histories by computer, and physical examination and surgery by programmed robots. Meaningful personal contact with a health care provider, who may not even be a doctor, is likely to be brief. Advocates of *computer medicine* believe in its superiority, because the methodology employs outcomes-determined algorithms with proven cost-effectiveness. Others wisely ask whether high tech can ever supplant the high touch of the doctor's hand, her placebos, and her humanity.

C is for Choice

Patient autonomy is a bioethical principle of recent vintage, an outgrowth of American laws governing privacy and liberty rights. Autonomy underpins many widely accepted western medical practices such as informed consent, living wills, and do-not-resuscitate orders. It properly empowers the patient with the control of her body, even for decisions that run counter to the doctor's advice. But patient choice, like free speech, has its limits. Testing these limits of autonomy is at the heart of the current heated debate on two bioethical issues: Futile treatment and euthanasia.

Futile treatment can be defined as that which neither cures nor palliates. Examples of medical futility include treating patients in a persistently vegetative state, or condemning a patient to an irreversible permanent dependence on intrusive life support in an intensive care unit. Families are sometimes known to demand such non-beneficial treatment. Unfortunately, recent case-law appears to favor such family requests for continued expensive futile treatment. Should this trend continue, autonomy's triumph over paternalism will wastefully bloat our health care budget deficit.

A final ethical dilemma: Euthanasia. Supporters of euthanasia assert that the right to die is the logical and ultimate expression of self-determination. Opponents, on the other hand, question the existence of such an absolute right, pointing to the sanctity of life and the dangers of abuse should mercy-killing be legalized.

Such abuse concerns led to the narrow 54 to 46 rejection of *aid-in-dying* initiatives in Washington and California in 1992 and 1993. However, this past November 8, voters in Oregon approved Measure 16, which sanctions any terminally ill patient's request for drugs to end life. Around the same time, the Michigan court absolved Dr Kevorkian of wrongdoing. Kevorkian is the pathologist who assisted in the suicidal death of 21 patients. It is easy to predict that legalizing euthanasia will rank as the premier ethical issue as we enter the era of the New Medicine.

Conclusions

The modern doctor faces a bewildering array of ethical dilemmas in the practice of her profession. The selection seems endless. In addition to those discussed earlier, we have test-tube babies and surrogate motherhood, life support for very low birth-weight infants and organ transplantation, to name just a few. Observers of America's health scene lament that physicians are not very good at identifying or solving bioethical issues. Pertinently, one might ask whether and how our medical schools and teaching hospitals are preparing future generations of doctors to meet ethical challenges—those recognized and those yet undefined. Never before in the history of medicine has its art been more dangerously asynchronous with, and outpaced by, its science.

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Entering the Age of the New Genetics with Eyes Wide Open

Sharon S. Ayabe, S.Y. Tan MD, JD

A concerted international effort currently is being made to localize human genes and to identify their role in specific diseases. This will enable physicians to test for a broader range of genetic characteristics and to manipulate human somatic and germ-line cells. With this new age of genetics comes a host of ethical issues and questions.

Introduction

Richard is 2 years old and his uncle just died from Huntington's disease. His parents read in *Reader's Digest* that a simple blood test could determine if he, too, will develop Huntington's disease.

Malia, 35, is 10 weeks pregnant. She is requesting "genetic testing" on her fetus because she and her husband want to have "the perfect family."

Susie is 21 and from Cleveland; she has been dating your patient Kimo. They recently visited her family on the Mainland, including a few cousins with cystic fibrosis and now Kimo is concerned that Susie may be a carrier. Today she presents at your office asking to be screened for the cystic fibrosis gene.

Any one of these patients may present at the physician's office with questions concerning medical genetics. Questions which hitherto had been prefaced with *if* and *when* have now burst forth as the issues for the here and now. Ready or not, primary care physicians will move to the frontlines of this genetic revolution as they manage their patients' requests and needs for genetic services.

Genetic Testing

Genetic screening is generally used in two arenas: 1) testing of presymptomatic individuals for medical treatment, and 2) testing of couples for reproductive decision making. Ideally, in the former case, people learn they have a genetic disorder and then receive effective treatment through conventional medical or genetic therapy. And in the latter, couples can decide whether they will risk conception, terminate a pregnancy, or prepare for the birth of an affected child.

Why Test if There is No Cure?

Almost everyone agrees that presymptomatic testing is appropriate when an intervention is efficacious when started before symptoms appear.[1] But is testing beneficial when no cure for the disease is available?

For example, Huntington's chorea is an autosomal-dominant disease that usually cannot be clinically diagnosed until the fourth or fifth decade of life. But it can be genetically diagnosed in an asymptomatic individual. Unfortunately, no cure exists for this mentally and physically debilitating condition yet. Individuals have approached their physicians requesting testing for themselves or their offspring hoping that they are not at risk. Usually they are unaware of the emotional and social harm stemming from a positive test result.

Some studies suggest that as many as one in 10 patients who test positive for the Huntington's disease mutation never make a full emotional recovery.[2] Even with professional counseling, a few have had to be hospitalized for severe depression and some have even committed suicide.

Individuals who test positive may be stigmatized. In the past, large screening efforts were made for sickle cell traits, Tay-Sachs disease, and Alpha$_1$-antitrypsin deficiency which led to adverse psychological consequences for parents of affected children. They felt afraid, worried, and anxious.[3] Carriers of the sickle cell trait were stigmatized as being undesirable marriage partners and were socially ostracized.[4] Additionally, children who test positive may become scapegoats who are abused because they remind their parents of their own unacceptable traits.[5]

Similarly, Dr Bruce Ponder, who has been seeking the genetic marker for breast cancer at Cambridge University, worries that patients who test positive for cancer might actually increase their cancer mortality. Positive test results, by triggering depression, may actually worsen a patient's chances of survival.[2] Emotional stress, disturbed sleep patterns, and decreased appetite may all contribute to a diminished immune response and hasten disease progression.

On the other hand, a large study conducted in Canada suggested that knowledge of disease status can actually improve the quality of life. After they requested testing for Huntington's disease and learned of their risk, many patients reported improved well-being, less anxiety, less depression, and general improvement in their psychological status than when they were living with uncertainty.[6]

Clearly, for some people living with ambiguity is worse than bad news. For these individuals a case can be made for testing even if there is no cure. For others, ignorance is preferable to knowledge of impending disease. Those who request testing will need counseling and education regarding how the test result might affect them.

Primary care physicians are familiar with patients requesting a variety of diagnostic tests and medical therapies. They know

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their patients well, and they are skilled at helping them understand the risks and benefits of medical services. When necessary, they do not hesitate to discourage certain patient requests believing that more harm than good would result. These patient-care skills, coupled with an understanding of the new genetics, will allow the primary care physician to assume the lead advisory role with regard to genetic testing.

Will Genetic Testing Enforce Fatalistic Attitudes?

Some critics have condemned the overemphasis, particularly in the media, on genetic causes of behavior and disease. They speak of the *geneticization of society* and argue that over-expenditure of resources on genetic research will be at the expense of basic social needs, such as food, shelter, and routine prenatal care.[7] *Over-genetization* can adversely affect individuals and frustrate the physicians who work with them.

Both genetic predispositions and environmental influences bear on a patient's health. Yet some fatalistic patients blame their lack of health on everything except their poor life-style choices. Armed with knowledge of genetic markers for diseases like alcoholism and obesity, these patients will deny responsibility for their conditions all the more and may stubbornly refuse to participate in their health care.

If patients test negative for breast cancer, would they conclude that they no longer need routine breast examinations? If a patient were determined to be susceptible to coronary heart disease because of his or her genes, might this cause him or her to ignore dietary and exercise advice? To the extent that genes are seen as more important than the environment, our actions may be viewed as genetically determined, rather than as a result of free will. For example, some criminals have attempted to use the *XYY defense* arguing that their genetic composition predisposed them to criminal activities beyond their control. The XYY defense generally has been rejected in court.[8]

The focus on *genetic disease* should not pull society away from personal responsibility. Fortunately, most patients understand how life-style choices affect their health. When reporting results of genetic screening to their patients, physicians must reinforce the notion that genetic predisposition is but one determinant of disease and emphasize suggestions for minimizing disease expression.

Will Defective Genes Invite Discrimination?

Predictive genetic testing reveals asymptomatic conditions that can manifest themselves later in life or can remain unveiled. This information is not only of interest to patients and their physicians but also to their prospective employers and insurers. A recent article described 41 cases of discrimination against otherwise healthy people based solely on their genetic risk. In most cases, the victims were refused health or life insurance. Some were refused jobs; others were banned from adopting children.[2] According to a 1991 survey conducted by the Congressional Office of Technology Assessment, only 12 of 330 *Fortune 500* companies reported they were conducting genetic monitoring or screening. Roughly half of these executives thought genetic monitoring or screening would be acceptable, either for the benefit of the employee or the employer.[9]

The Americans with Disabilities Act (ADA) ensures that handicapped individuals are not discriminated against in the job market. Applicants are considered qualified if they are able to meet all the program's requirements in spite of their handicap. Additionally, the employer could be required to provide reasonable accommodations to make employment possible. However, the Equal Employment Opportunity Commission, the federal agency for enforcing the ADA, has stated that "physical or mental impairment" does not include "characteristic predisposition to illness or disease."[10] This narrow construct could mean healthy people can be denied opportunities based on conditions to which they are predisposed, while the symptomatic are protected from discrimination. This is unfair and irrational.

Consider insurance companies. Currently insurers may be satisfied with gleaning information from genetic tests already performed and will undoubtedly be gathering this information from applicants through questionnaires or medical records. Already children with genetic disorders may lose their health insurance when they become adults; this potential loss has often prompted geneticists to avoid seeking a definitive diagnosis.[7] Thus far, state insurance commissions in the United States have placed genetic information in the same category as other types of medical information that insurers could legally require as a condition of insurance.[7] However, legislation has been introduced in several states to allow people to keep genetic information, including family histories, from insurers.[6] Such legislation would help protect people from discrimination, but may overburden insurance companies, especially life insurance companies, in their underwriting practices. Insurers have argued that if they cannot access an applicant's genetic profile they will be at an unfair disadvantage—some individuals, on learning that they could develop a serious condition, will buy large amounts of insurance.[10]

Patients with genetic predispositions to disease must have the right to pursue happiness through financial stability and productivity. Employers and insurance companies have the right to make a profit. In the new genetics, a victory for society should not be at the expense of any of these players. Insurance companies should provide coverage for those with genetic risks, with such policyholders paying modestly higher premiums for their coverage. Employers should hire these people and when reasonable they should accommodate their predispositions. For example, if current or prospective employees test positive for $Alpha_1$-antitrypsin deficiency, reasonable accommodations ought to be made for them to avoid contact with noxious inhalants.

Should Carriers of Serious Genetic Disorders Burden Society with Their Offspring?

In a 1990 general population survey, 39% of the respondents believed that "every woman who is pregnant should be tested to determine if the baby has any serious genetic defects." Twenty-two percent thought that, regardless of what they would want for themselves, "a woman should have an abortion if the baby has a serious genetic defect." Nearly 10% believed a poor woman should be required by law to have an abortion rather than have the government pay for the child's care.[11]

As health care becomes increasingly rationed, taxpayers could resent having to pay for the support of disabled children if their births could have been prevented. If a woman undergoes a prenatal diagnosis and then decides to carry to term a baby with a serious, incurable, and costly problem she may be socially scorned. She could, of course, refuse prenatal diagnosis, but she would still be considered irresponsible for doing so. But many genetic tests contain only crude predictive value. A positive result often cannot predict the extent of potential penetrance and expression of a defective gene in an individual. A society that coerces women into having abortions based on the results of

genetic tests will force "throwing out many healthy babies along with the bathwater." Private insurance companies in the United States have already tried to withhold reimbursement for medical care of children with cystic fibrosis who were diagnosed before birth and whose parents refused to abort. Thus far, state insurance commissioners have prevented this type of discrimination.[11]

Can a culture that places such high value on a woman's right to choose abortion even consider limiting her right to choose life?

What is Normal?

People are special because they possess unique genetic characteristics expressed as strengths and weaknesses. Individuals and societies pencil the fine line between what is distinctive and extraordinary and what is peculiar and unacceptable. Prenatal genetic screening allows parents to make decisions for selective abortion. Some insist that parents should have full autonomy to terminate pregnancies for babies that seem inferior. Others argue that babies should be protected from those who would reject them because they do not meet an arbitrary standard.

The vast majority of Americans believe couples should have the right to abort a seriously defective fetus. About 80% would terminate a pregnancy if they were told their fetus had Down's syndrome. A survey of parents of children with cystic fibrosis showed that 20% would abort for cystic fibrosis, 17% would abort for incurable disorders starting at age 40, and 7% for those starting at age 60.[12] Greater than one in 10 would abort for obesity and another 2% to 3% would terminate a pregnancy if their fetus were diagnosed to have treatable diseases like cleft palate or nearsightedness. Some parents even feel that the sex of a child is relevant. A recent study of American genetic counselors concluded that a large percentage would perform prenatal testing for the sole purpose of sex selection.[13]

How would limits be placed on selective abortion? In an agricultural society, genes with potential for physical deftness rather than intellectual prowess would be valued. For the academic, the opposite might hold. For some couples, reproductive decisions can center on cosmetic issues and pregnancies could be terminated because of straight-hair genes or lack of height. Ideas such as *normal* and *disabled* are rooted in shifting societal values; even if restrictions for abortions after prenatal diagnosis were legalized, the determination of these boundaries would be formidable.

This analysis may seem out of place in a society that permits abortion on demand. And it would be pointless were it not for the impact of physician counsel on patient decisions. In a recent study, the parents whose doctors approved of an abortion for cystic fibrosis were nearly twice as likely to abort for cystic fibrosis than those parents with disapproving doctors.[14] Well-informed, compassionate, and insightful physicians ought to assist patients in their own understanding of what normalcy is and guide them to make appropriate decisions.

Who Should Offer Genetic Services?

Many believe that genetic specialists should be the ones offering counseling and screening services.[2] Geneticists are concerned that most physicians are not familiar with genetic concepts and lack the tools to serve as effective counselors. They demand a minimum of graduate-level training as a prerequisite. A recent study found that many primary care physicians, especially those who are not exposed regularly to genetics, are not familiar enough to serve as competent counselors.[15]

Although it is reasonable to assume that geneticists are more familiar with all the nuances in their field, it is equally true that primary care physicians are more informed about their patients' individual and family needs and desires. These physicians can familiarize themselves with pertinent issues regarding the new genetics. But not every genetics counselor can come to know patients and their families with the intimacy their personal physicians can. Patients look to their primary care doctors to interpret many other laboratory tests and to give appropriate advice. Well-informed physicians who understand the limits, benefits, and risks of genetic testing should play the central role as advocates and advisors for their patients.

Genetic Therapy

The goal of genetic manipulation is twofold: First, to repair or replace defective genes in somatic or germ-line cells; and second, to improve the genetic makeup of the sperm, egg, or early products of conception to improve the attributes of descendants. The former is considered correction; the latter, enhancement.

Gene therapy involves the manipulation of somatic or germ-line cells to alter their genetic composition. Germ-line engineering produces genetic changes that become permanently encoded in the sex cells of the person, while somatic cell alteration affects only the individual and should not produce inheritable changes.

Somatic-Cell Therapy

Somatic-cell gene therapy is a treatment of existing gene pathology. Many clinical protocols are presently underway to offer therapy for individuals with adenosine deaminase deficiency and certain types of cancer. On the horizon are treatments for other diseases including Lesch-Nyhan syndrome, herpes simplex, melanoma, familial cholesterolemia, and many types of malignancies. Previously, no effective cures had been available for most of these conditions.

Somatic-cell gene therapy cannot abolish genetic disease. In fact, should it become widely successful, it will increase the number of gene carriers with homozygous disease who will face the certainty of passing problem genes to their children.[16] This in turn will lead to a logarithmic increase in the need for somatic-cell therapy in future generations. Therefore, somatic-cell therapy alone is not beneficial in the long run.

Germ-Cell Therapy

Germ-line engineering of the human genome may become technically feasible within a decade. Specific techniques for the genomic alteration of germ cells has been demonstrated in animal models.[17] Germ-line changes generally would be expected to affect the genetic make-up of all tissues and cells in the developing offspring and all subsequent generations with grave implications for both the individual and for society at large.[18]

Potential justification for germ-line alterations include the correction of genetic defects not otherwise amenable to somatic-cell treatment, permanent stabilization of genetic material in offspring of high-risk mating, or the elimination of the need for repeated prenatal diagnosis and selective abortion in genetically at-risk families.[17] According to one view, a trial of genetic therapy would be justified only if the following conditions held: 1) the risk of treatment were no greater than the risk of being born with the given condition or of being destroyed

prior to implantation (the non-treatment options); 2) no other treatment were available that offered a superior risk/benefit ratio; 3) the purely research components of the trial did not pose substantial risk; and 4) consent had been obtained from an appropriate guardian.[18]

Dr Marc Lappe, professor of health policy and economics, argues that since changes in the germ-line potentially affect others in addition to the recipient of the altered germinal tissue (ie, the offspring and future descendants), such experimentation raises novel questions of traditional research ethics. Foremost among these is the adequacy and acceptability of proxy consent. Germ-line interventions may subject at least one or probably two generations of future persons to experimentation before the phenotypic effects of the germinal change can be said to test out.[17] Medicine is not an exact science. Many times patients are treated with well-researched FDA-approved drugs and develop serious side effects. Germ-line manipulation must surely be at least as problematic. Germ-line research presupposes direct experimentation on and destruction of embryos. The acceptability of this pivots on the acceptability of killing genetically altered but defective embryos or allowing their creation in the first place.[17]

Criteria to safeguard the direct genetic manipulation of the pre-embryo have been proposed. They include: 1) a specific correction of a defective gene will be made, 2) the procedure will not introduce any genetic errors or new genetic material that could have unpredictable effects in subsequent generations, and 3) such procedures include a check to ensure that the procedure has been carried out as intended, before allowing the pregnancy to proceed.[16]

In our fast-food and microwave society, quick processes tend to be over-esteemed. Nature already has a way of ridding the genetic pool of inferior genes via spontaneous abortion and natural selection. We cannot be assured that scientists in their laboratories will be able to better this process.

Enhancement of Normal Individuals

Germ line interventions can promote desirable genes or decrease deleterious ones to produce an improved genetic profile.[17] For many, this eugenic goal stirs memories of the forced genetic and ethnic cleansing attempted by Germany and the Soviet Union and the legislated sterilization of the disabled in the United States.

Enhancement is one side of eugenics. Instead of removing *bad* genes, it hopes to improve on *normal* ones. As knowledge of the structure and function of the human genome expands, social pressures will mount not only to repair defects and disorders, but also to intervene at improving or perfecting the structure and function of the genome. Enhancing a child's genes, one might argue, is analogous to giving a child a private education, a trip to Europe, or plastic surgery. If parents have the right to give their children these other benefits, do they not also have the right to give them enhanced genes?[9] Is the ability to pay determinative, and would this not serve to widen the gap between the haves and the have nots?

And as genetic enhancement becomes more frequently used, the cost of services may actually drop making the technology available for almost everyone. What then would our brave new world look like?

Conclusion

Ready or not, we are entering the age of the new genetics. Professional perspectives vary. Generally, geneticists are concerned about improving the gene pool, lawyers are interested in setting legal precedence, sociologists look beyond individuals to consider society as a whole, and entrepreneurs drool over the prospects of this new industry. Who, if not doctors, will lead us into this new era and advocate for and protect individual patients and their families?

Some physicians will remain largely ignorant or disinterested in these issues. Others will opt to refer their patients for genetic services, thus missing the opportunity to tailor-make plans for patients best known to them. Still others will become well-versed in the new genetics. They will recommend appropriate genetic services and expertly counsel their patients who trust them. They will also guide their patients in their decisions regarding screening and therapeutic options in the same manner they have guided their patients before the age of gene sampling, selection and cure.

Are primary care physicians prepared to lead? First, they must draw on the resources of the geneticists to understand the science; then they must look to the philosophers to appreciate fully the bioethics. Legal issues, societal concerns, and financial matters must also be appreciated. These are the caring and responsible physicians who will set the cadence and direction of our march into the new genetics.

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Hybridizing the Health Care Plans of Hawaii, Oregon, and Singapore

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Universal coverage requires costcontainment. Working models of health care coverage from Hawaii, Oregon, and Singapore address different aspects of cost-containment. Hybridizing the three produces the following system: A percentage of an individual's salary is mandatorily set aside in an individual medical account. Using these savings, the individual purchases catastrophic medical insurance with a managed care organization. Residual funds are used as a deductible or co-payment and to purchase additional medical services as desired. Enough funds should accumulate during an individual's working life to enable continued coverage after retirement. The basic health care package needs to be limited and is defined by a systematic and rational process based on cost-benefit analysis and democratic consensus regarding priorities and coverage. Medicaid recipients get the same basic package from managed care organizations as that available to the rest of the population; low wage earners receive sliding-scale subsidies from the government. Co-payments and deductibles remain in place except for beneficial preventive services.

The two burning issues facing American health care policy today are universal coverage and cost containment. To address the first without considering the second is idealistic at best and deluded at worst; to address the second without addressing the first is unethical.[1]

Hawaii and Oregon, and the newly industrialized country of Singapore, have recently reformed their health care systems with these precepts in mind. Their novel approaches to the problem of coverage with cost containment have unique strengths potentially complementary, integrating these strengths to create an affordable, just, and politically feasible model of health care in the United States.

Hawaii's QUEST[2]

The burgeoning Medicaid bill in Hawaii ($64 million in emergency funds in addition to annual funding of $492 million in 1992, and even more required for 1994 and 1995) compelled the state to enact a strategy for indigent medical coverage—the Health QUEST Program. Managed care replaced fee-for-service. The various insurers in Hawaii, HMSA, Kaiser, Queen's, Straub, compete to provide a standard benefit package to these patients for a prepaid set rate. Medicaid enrollees can have the provider of their choice from the participating plans. In the past, they saw any doctor they wanted so long as the physician accepted medicaid.

Patients with incomes greater than 133% of the federal poverty level pay a share of the premium as determined by a sliding scale based on income. The near poor and others previously excluded from government health insurance now have access to coverage.

Under regular Medicaid, those enrollees who needed medical care had to be declared disabled and show they had exhausted all their assets before they became eligible for health insurance. QUEST does away with this disability criterion. Part-time work or job failure no longer threaten medical coverage. Under QUEST, this fear is no longer a disincentive for returning to work.[3]

Health QUEST builds on the state's employer mandate. Under the Prepaid Health Care Act, employers have been required to cover employees working more than 20 hours a week with a standard, state-established package of health care benefits. This mandatory coverage has reduced uncompensated care and cost-shifting. Furthermore, it has facilitated voluntary community rating by insurers with the young and healthy paying into the same pool. Consequently premiums are among the lowest in the nation and the general access to primary care has decreased high-cost service utilization.[4]

The implementation of Health QUEST has not been without some administrative confusion. Patients who are used to the previous system have to adjust to seeing only their designated primary care provider. However, the concept is sound and these growing pains should disappear in time.

Oregon's Plan[5]

Oregon recently revamped Medicaid coverage for everybody below the poverty line by limiting the medical services provided or rationing. Oregon went through a painstaking and laborious open process to prioritize services. A list of condition/treatment pairs was generated using ICD-9 (International classification of diseases 9) and CPT-4 (Physicians' current procedural terminology 4) codes. This list was then 'ordered' by computer using various criteria: The first condition was the ability of a treatment to prevent death. If any pairs were tied on this basis, they were then ordered on the average cost of treatment. This computer-ranked list was then reviewed by the Oregon Health Services Commission and further reordering was done by hand based on principles such as ranking preventive measures for a condition above treatments for the same condition. The opinions of Oregonians were polled at public meetings to finalize the

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prioritization list. Comfort care, maternity and child health, family planning services, and communicable diseases were given a higher priority as a result. Cosmetic and infertility services, and treatment for self-limiting conditions, on the other hand, weren't.

The cost of covering each service on the list was estimated by actuaries; the total cost at various cut-off points could be determined. The Oregon legislature then decided on the final cut-off line, in effect stating that services above the line were worthy of public funds, whereas services below it were not. A managed care capitated system with designated primary care providers acting as gate-keepers was installed to further control costs.

For this past year, the cut-off mark was item 568 in a list of 688 condition/treatment pairs. Excluded services included treatments for self-limiting conditions such as the common cold (rank number 636), non-vaginal warts (rank number 653) and viral hepatitis (rank number 586). Conditions with effective home remedies, eg, noninfectious gastroenteritis (rank number 590) and sprains (rank number 623) were also excluded, as were conditions for which treatment is ineffective or futile, eg, surgery for soft-tissue back injury (rank number 575) and treatment for cancer with distant metastasis where treatment offers less than 5% five-year survival chance (rank number 670). Cosmetic treatments, eg, nontoxic goiter (rank number 580), sebaceous cyst (rank number 688) and keloid scars (rank number 676) were also excluded.

Singapore's Health Policy[6]

The city state of Singapore's health policy has as one of its basic tenets the promotion of individual responsibility for health by avoiding over-reliance on medical insurance or state welfare. The incentive for staying healthy is financial. By mandate, 3% of an individual's salary and a matching contribution from the employer go into a medical savings account in the individual's name (Medisave account). This money is deposited with the state and earns interest. The individual makes withdrawals as needed for medical expenses. In theory, enough money accumulates in an individual's medical account during the course of a working life to pay for medical bills or premiums post-retirement and during the final years of life.

The government encourages individuals to purchase private or government catastrophic health insurance using funds from the medisave accounts.

To ensure that middle and low income Singaporeans can afford their co-payments, the government subsidizes the cost of a basic package at certain hospitals. Within these hospitals, wards are divided into three classes: A class beds are not subsidized and provide creature comforts such as air-conditioning and private rooms. B and C class beds are subsidized and offer fewer creature comforts (much like the classes in a train or plane, same destination but varying frills). If a patient does not have the medisave money to obtain basic services in a C class ward, fees may be waived or paid for by a government safety net fund from general taxation.

To moderate the excesses of the fee-for-service system, hospitals have revenue caps, and limits are placed on the fees private practitioners can collect from a patient's medisave account—though not from his or her personal savings.

Two Themes in Cost Containment

The seemingly varied considerations in cost containment cluster around two main themes: Financial incentives, and the absence of a natural limit on health care demand.

Misdirected or absent financial incentives are a common thread running through issues like efficiency, supplier-induced demand, and individual responsibility. And medical demand, like greed, is potentially limitless. Technology and research lead to new and expensive treatments to prolong life, increase medical demand, and patient expectations. There is no obvious end point to either research or patient demands.

Hawaii's QUEST program properly vests the financial incentives in the provider, Singapore's efforts are remarkable for its emphasis on financial incentives to the consumer, and Oregon's plan recognizes the need for clearly spelled-out limits on medical services. All three approaches are worthy of inclusion in a health care policy.

Financial Incentives

The demise of communism is enough reminder of the role of financial incentive or the lack thereof in human endeavor. Health care is no different—notwithstanding professionalism and ethics.

Hawaii's efficiency-inducing and waste-reducing incentive is directed at providers through capitated reimbursement for managed care organizations. Capitated payment is an excellent incentive for providers to reduce waste, and to increase efficiency. It motivates providers to reduce demand by emphasizing primary care, disease prevention, and realistic expectations from patients (unlike fee-for-service where the incentive to providers is to increase demand). Furthermore, by pooling Medicaid patients, the state creates a large block of patients for whom the various managed care organizations compete.

Singapore, on the other hand, inspires the individual and the provider toward thrift. By using a system of individual medical accounts and high deductible catastrophic health insurance, the myth of the third party payer is shattered as one's own cold cash is on the line. The individual can go with a basic government-subsidized health care package and government health insurance, see a doctor only when necessary, pay the deductibles and save what is left of his or her medisave account. Or one can fork out for plusher hospital rooms, interactive television, and medical services excluded from the basic health care package but available as insurance options or direct out-of-pocket purchases.

Limitless Demand

The absence of a natural limit on health care demand in the face of finite health care dollars compels a government, managed care organization or insurance company to define basic health care coverage. Failure to clearly limit the contents of an offered health care package allows treatments in the gray zone of minimal benefit or even clearly beneficial but exorbitant and unaffordable treatments to push up the price of health care. This situation can escalate as new technologies and treatments become available.[7]

Recognizing that it had to choose between unlimited services for a few versus limited coverage for many, Oregon used social values and cost-effectiveness criteria to spell out clearly what was and wasn't covered. Such definition not only facilitates cost-containment but is explicit rationing rather than the haphazard, implicit rationing that characterizes poorly defined health care packages. Implicit or hidden rationing can take a variety of forms including queuing, subtle social factors, and

administrative barriers to deter the delivery of services.[8] By facilitating cost containment, predetermined and explicit rationing minimizes the need for administrative pressures and hassles on doctors. Furthermore, the rationing decisions can be made by the people who are actually paying the costs and getting the benefits.[9]

Oregon appears to have succeeded in defining its package without having to exclude beneficial but expensive treatments, eg, heart-lung transplant for primary pulmonary hypertension and bone marrow transplant for multiple myeloma and chronic leukemias are funded. Whether such beneficial but expensive treatments will continue as technology and new treatments burgeon is uncertain.[7,10-11]

Defining a Basic Health Care Package

A guiding principle for determining allocation in limited resource situations is the Utilitarian Ethic, "The Greatest Good for the Greatest Number."[12-13] Cost-benefit analysis is potentially a sophisticated and rational tool for this ethic to wield.

Cost-benefit analysis quantitates what one often suspects, that the money being spent on a particular service might do more good spent elsewhere. One way of expressing cost-effectiveness is by using the QUALYs (quality-adjusted life years) approach pioneered by the British. QUALYs are calculated by an equation combining the number of additional years of life (obtained from a given treatment) with the quality of life in each of these years.[14] Outcomes from across the spectrum of therapy can be quantified in this way.[16] Procedures can then be ranked formally by cost per unit of benefit gained. Unfortunately, cost-benefit analysis is fraught with technical pitfalls[15-17] and has not reached the maturity necessary to allow its unqualified use in ranking medical services. Oregon tried using cost-benefit analysis in its initial attempts to rank services but generated an inappropriate list.[18-19] Furthermore, the federal government said that the quality of life weightages (as estimated by telephone poll of Oregonians) might be discriminatory against Americans with disabilities.[20] It would be a shame, however, to completely discard cost-benefit analysis. With refinement, such an approach should be far preferable to non-formalized techniques of comparing treatments,[15] especially when seriously contemplating the exclusion of services.

Some have suggested the establishment of centers for technology assessment and outcomes research.[21-22] Such centers could guide, develop, and disseminate systematic knowledge about cost-effectiveness. With the data base on outcomes generated by such a center, the contents of a basic health care package can be rationally determined. Patient input can further improve the final product.[11,23-24] To protect minorities and the disabled, antidiscriminatory laws should be enforced but without sledgehammering cost-benefit analysis altogether.

A Healthier Hybrid

Synthesizing the complementary features of the health plans of Hawaii, Oregon, and Singapore results in the following plan:

1. Individual medical savings accounts are created by mandatory employer and individual contributions.
2. Using these funds, the individual buys catastrophic insurance with the managed care organization of choice. Residual funds are used for inpatient deductibles and outpatient co-payments, and to purchase additional medical services as desired. If the total monthly contributions undercut the insurance premium, then a government subsidy makes up the difference.

Generic Smith works part-time for a fastfood restaurant. Five percent (hypothetically) of his salary and matching contribution from his employer that goes into his individual medical account is insufficient for a high deductible medical insurance premium. A government subsidy makes up the difference and Generic is covered.

Generic Smith undergoes vocational training and starts work for a car manufacturer at an annual salary of $24,000. Suppose 10% (shared equally by employer and employee) goes into his medical account. That's $2,400. He pays out $1,800 for his catastrophic insurance premiums and $50 as payments for two visits to the doctor. At the end of the year, he has $550 accumulated in his account. The bank awards his medical savings interest at the market rate. He changes his managed care organization once when shifting house. He attends his free health maintenance checks where both hypertension and hypercholesterolemia are noted and treated.

3. With careful budgeting, enough funds should accumulate during an individual's working life to enable continued coverage after retirement. Any funds in excess of a certain limit can be withdrawn for nonmedical purposes. Funds remaining at death can be used in funeral expenses and inheritance.
4. The basic health care package is defined with high resolution, service by service, using a systematic and rational process involving cost-benefit analysis and democratic consensus regarding priorities and coverage.

Generic Smith retires at age 60 with $50,000 in his medical account. His account depletes by $2,000 annually in premium payments. At age 62, Generic is diagnosed with multiple myeloma. He receives out-patient chemotherapy and pays the $3,000 deductible when admitted with pneumonia. His prognosis is poor and bone marrow transplant offers him the best chance of prolonged survival. This option is not included in the basic health care package, but Generic opts for it anyway. He pays the $100,000 bill with the remainder of his medical account funds and his personal savings. As his medical account was depleted after the transplant, the premiums and hospice deductible of his last years are paid for by the government.

5. To minimize reckless depletion of individual medical accounts, they can be used only to cover up to a part, eg, 80% of the charges for non-basic medical services.
6. Beneficial preventive services are exempt from co-payments.
7. The poor are assured the same basic package from managed care organizations, paid for with public funds.

Regular Joe is an unemployed alcoholic. He has the same catastrophic insurance policy as Generic Smith, paid for by the government. He too has access to preventive services and a designated primary care doctor. Regular Joe is diagnosed with multiple myeloma when he presents with a pathological fracture. His prognosis is poor, and he cannot pay for a bone marrow transplant, but he receives chemotherapy as standard treatment.

8. Additional refinements would include centers for technology assessment, outcomes research, and practice guidelines.
9. Changes in the malpractice laws and widespread use of living wills and durable powers of attorney also could prove effective in further controling costs.

The Ethics of the Proposal

The ethical imperative of distributive justice (fair distribution of burdens and benefits) drives universal coverage. In our proposed system, everyone has access to the same adequate basic health care package, the contents of which are worked out logically and democratically. Mandatory catastrophic coverage and community rating distributes risk, while the high deductible apportions burden to the individual according to usage. Also, those who want more will have to pay for it out of pocket; they increase their health benefit by increasing their personal financial burden. Such a system tries to balance equality, freedom, and responsibility: The equality is in distributing risk and providing access to all, the freedom and responsibility in allowing those who want more to personally pay the difference. It is a two-tiered system which can favor the rich in terms of choice. However, if the basic health care package is carefully defined, the actual impact of any increased choice on disease outcomes should not be significant. Futile or ineffective treatment at additional cost will hardly make a difference in patient well-being.

Employer mandates can result in a *regressive* mode of financing healtlh care. In regressive financing, payments are an increasing percentage of income as income decreases.[25]

> Jane Ordinary gets a $2,000 monthly wages and benefits package from her employer. As health insurance purchased by the employer is tax-deductible, the package includes a low-deductible health plan for $300 per month, or 15% of Jane's salary. Rob Normal works for the same company for a $3,000 monthly wages and benefits package; the same health coverage costs only 10% of his salary.

In the system suggested, by taking medical account contributions as a percentage of income (and providing sliding-scale-subsidies as needed), premium payments are proportional to income and therefore do not unfairly penalize the lower income classes. Proportional financing is ethically more desirable.

One concern is that financial incentives for doctors to limit services will result in inappropriate withholding of testing and treatment. However, this should be less frequent with explicit rationing compared to the implicit rationing now so widely practiced. Committees can advise if financial incentives to doctors to limit referrals are exceeding a dangerous level. Managed care quality assurance bodies can be supplemented by independent or state watchdog bodies, and appropriate exercise of malpractice laws and practice guidelines will serve as additional safeguards.

The Politics of the Proposal

Sixty-seven percent of Americans say their problem is cost, not coverage.[26] By defining a rational health care package in an open process, a balance can be struck between coverage and cost to suit the average American. Individual medical savings accounts can act as the political motivator for rationing health care by making even more apparent to the consumer (voter) the economic realities of health care cost. The proposed system places everyone on the same side, the side of cost-containment. It can abolish the sometimes adversarial relationship between insurers, consumers and providers.

The individual mandate (as opposed to single-payer systems) retains market place competition, an incentive to quality. It can replace Medicare in providing health care coverage during retirement, all the while maintaining individual choice and continuity of care. It reduces the risk of uncompensated deductibles with catastrophic insurance coverage. By exempting indicated preventive services from co-payments, patients will not be deterred from seeking such services. By using private health care plans and financial institutions, public bureaucracy and inefficiency can be minimized.

Any objection to an individual mandate should be tempered by the realization that individuals are eventually paying for health care anyway—at the rate of $9,500 a year per household.[26] The Hawaii experience has shown that mandatory coverage can reduce health care costs for all.[4]

High-resolution definition of basic packages in a service-by-service-manner will necessarily be a laborious process depending on majority rather than unanimous decisions. The inclusion of new treatments in the basic package could be delayed as the same democratic assessment must be applied to them as for services already included in the package. If these new services are to be additions rather than replacements, there should be consensus as to their cost-effectiveness.

Conclusion

For universal coverage to become a practical reality, we need the right mix of financial incentives to both patient and provider, and a well-defined basic health care package. The three working models of health care in Hawaii, Oregon, and Singapore provide many of these ingredients. Bringing together their strengths can optimize cost-containment and facilitate universal coverage with hybrid vigor.

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Must Theology Remain Silent in Bioethics?

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Bioethics tends to lack both breadth and depth; a theological perspective can provide the necessary lack. The essential role of a theologian has always been to direct attention to dimensions of human situations that may have escaped our notice, to account for the interpretive frameworks people bring to their experiences of health, medicine, suffering, and death within a vision of human nature and destiny.

Bioethics does well what it does—provide principles of analysis and resolution of complex dilemmas. But there is much that it does not do. According to Ron Hamel, "It tends to lack both breadth and depth. Its vision of the moral life is constricted and, in focusing so much on principles and actions, it fails to account for the interpretive frameworks people bring to their experience of illness, their search for health, and their struggle with death."[1]

At the heart is the suggestion that a theological perspective can provide the necessary breadth and depth that shapes bioethics. The courage of the venture is dramatized by the statement of Rainer Maria Rilke: "We must assume our existence as broadly as we in any way can; everything, even the unheard-of, must be possible in it. That is at bottom the only course that is demanded of us; to have courage for the most strange, the most singular, and the most inexplicable that we may encounter. That mankind [sic] has in its sense been cowardly has done life endless harm; the experiences that are called "visions," the whole so-called "spirit-world," death, all those things that are so closely akin to us, have by daily parrying been so crowded out of life that the senses with which we would have grasped them are atrophied. To say nothing of god."[2]

Increasing Talk about the Legitimate Role of Theology in Bioethics

Bioethics and its practitioners have not been terribly hospitable to religion and theology over the past 20 years or so. That is ironic since: "...as the field of modern medicine ethics took shape two generations ago, its articulators were at ease with theology and often even at home in theological seminaries. A generation later they and their colleagues had moved out, to clinics and universities, where religious questions were often alien and theology was excluded."[3]

Today, we may be witnessing a shift in current. There has been more and more talk about the legitimate, and even significant, role of religion and theology in bioethics. A pioneer in this effort has been The Park Ridge Center, an institute for the study of health, faith and ethics. In its programs of research, publishing, and education, the center gives special attention to the relationship of religious beliefs on questions that confront people as they search for health and encounter illness. Other leading journals in the field are the *Hastings Center Report* which published a special supplement in its July/August 1990 issue, "Theology, Religious Traditions and Bioethics." The *Journal of Medicine and Philosophy* devoted its entire June 1992 issue to "Theology and Bioethics." The *Kennedy Institute of Ethics* journal published an article titled "Religious Ethics and Active Euthanasia in a Pluralistic Society," in its September 1992 issue. The Center for Ethics, Medicine, and Public Policy published a collection of essays entitled "Theological Development in Bioethics." *The Second Opinion*, a professional journal of The Park Ridge Center, has published many articles on the relation of theology and bioethics.[1,3]

New Context, New Openings for Bioethics

The new role of theology in bioethics has been strengthened by the view of the universe described by modern quantum physics. The universe viewed by some physicists is a world of a complicated web of relations between various parts of a unified whole. The world is not made up of separate objects, but rather of a network of relationships that include the human observer in an essential way. "We have to remember that what we observe is not nature in itself but nature exposed to our method of questioning."[4] So the subjectivity in the process of observation is intimately linked with the connectedness of everything. "If the world is a network of relationships, then what we call an object depends on how we delineate it, how we distinguish it from the rest of the network."[5] In this sense what we see depends on how we look. Hence the traditional idea of an *out there* world is no longer appropriate. Neither is the notion of a purely objective world that follows strict casual chains of connection.

Implications of the Concept of Relations

The concept of relations—the patterns and processes of interdependence of all things in the world—has profound implications for theology and bioethics. It is a vision that will transform our view of who we are and how we fit into the way of nature.[6] Some implications:

- We will seek the larger patterns of relationships that underlie the whole range of moral life and moral experience in the world. For example, could the appreciation of the interdependence of all life lead to a heightened ability to sense and actually experience our oneness with each other?
- We will raise questions about the common discourse of bioethics. Is it sufficiently rich to convey the full meaning of relevant theological language:
 - Covenant instead of contract.
 - Neighborly love instead of beneficence.

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– We are members of one another instead of autonomy.

What theological language presupposes: The uniqueness of self is founded by co-presence of the other. We know ourselves only within our relationship with others.

• We will enlarge the role of the primary narrators—patients, families, physicians, nurses, social workers. We will be dealing with a much denser complex of interrelationships that may affect the ethos of the context in which we do bioethics.

The Theologians' Contribution to Bioethics

The focus here has shifted from theology to the person doing the theology, namely the theologian. The essential role of theologians has always been: Directing attention to dimensions of human situation that may have escaped our notice, "to account for the interpretive frameworks" people bring to their experiences of health, medicine, suffering and death within a vision of human nature and destiny. In doing this basic function, the theologian assists in placing a particular decision within the context of a fuller account of purpose and meaning in life. And when that is done, it can deepen our appreciation of the moral dilemmas we face and of the options available to us for responding to them.

One example of alternative to moral dilemmas is that of the physician-assisted suicide. A physician who opposes physician assistance in dying is physician-philosopher Leon Kass. In *Why Doctors Must Not Kill,* he argues:

> The deepest ethical principle restraining the physician's power is not the autonomy or freedom of the patient; neither is it his [sic] own compassion nor good intention. Rather, it is the dignity and mysterious power of human life itself, and, therefore, also what the oath calls the purity and holiness of the life and art to which he has sworn devotion. A person can choose to be a physician, but he or she cannot simply choose what physicianship means.[7]

One can respect the wishes of a physician who believes it is the deepest constitutive essence of the physician to respect the dignity and power of human life. Yet a theologian will raise another point of view, "to participate in covenant with their patients to explore the meanings of death which challenge all of us, not only as physicians but as human beings."[7]

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Ethics, Standards, and TQM

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The most important ethical issue for our profession is the responsibility to assure the care delivered by our colleagues and ourselves meets a self-imposed standard of excellence. There is anecdotal and experimental evidence that we have not fulfilled this obligation. Peer review has proven, for a number of reasons, to be ineffective; however, improvements in the epidemiologic sciences should provide better standards and total quality management (TQM) might prove to be of value in monitoring, comparing and improving the decisions made by physicians. Its promise lies in its emphasis on statistical analysis, its focus on systematic rather than human error, and its use of outcomes as standards. These methods, however, should not diminish our other professional responsibilities: Altruism, peer review, and in Hippocrates' words "to prescribe regimens for the good of our patients—and never do harm to anyone."

Now that we are an industry, medical economic concerns tend to dominate our professional debates. So it is refreshing to be a part of this special issue of the *Hawaii Medical Journal* focusing on medical ethics. Our profession should participate in the debates over ethical dilemmas such as the impact of genetic discoveries, society's responsibility to provide universal access to health care, the rationing of health care services, and the extent to which patients should have a choice in treatment decisions. To be an effective voice in these debates, however, we must resolve some internal issues that have been avoided. These relate to our ethical responsibility to assure that the care delivered meets a self-imposed standard of excellence.

Standards are a prerequisite for professions. *Webster's New Collegiate Dictionary* defines a profession as a calling requiring specialized knowledge and often long and intensive preparation.[1] This narrow definition, however, does not do justice to the full import of the medical degree. The obligations, responsibilities and power of physicians go well beyond the intensive study required to obtain our specialized knowledge. Starr and Friedson have pointed out that the medical profession is a legal, institutional and moral privilege granted by society that must be earned by physicians through observing certain standards of behavior.[2] According to these authors, standards of behavior include, at least, altruism, a commitment to improvement and peer review. I would add to these the admonition of Hippocrates, "I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone."[3]

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Physicians are better decision makers than patients because their years of intensive study have resulted in what economists refer to as "asymmetries of information." This means physicians have more knowledge than patients so that medical care decisions are left to them. Furthermore, most patients expect and want to rely on the knowledge of their doctors to help them decide what they should or should not do when they are ill. No amount of patient education is likely to change these asymmetries, and thus relieve physicians of their responsibility, and patients of their vulnerability. To use this knowledge "for the good of my patient" is the most solemn ethical obligation of a physician who wishes to earn the privileges of our profession.

On the other hand, physicians are subject to economic conflicts of interest regardless of the method of reimbursement. In a fee-for-service environment, the temptation is to provide more services than required; in a capitated system the opposite is true. To remain professionally responsible, the physician must resist taking advantage of these conflicts. Furthermore, there are potent noneconomic factors that can at times influence physician decisions adversely, including individual patient desires, societal pressures, the physician's desire for self-fulfillment and her or his style of practice. So it is not enough to trust our "ability and judgment," which can be influenced by all of these factors that are extraneous to the clinical situation. We must depend on our profession to help us resist the temptations to which frail human physicians are heir.

How effective has our profession been in fulfilling this responsibility? The apparent answer is: Fair to good but certainly not perfect. The data is anecdotal and evidence based. McPheeters has compared the utilization rates for laparascopic and operative cholecystectomy. He points out that patients who have asymptomatic gallstones are being operated on much more frequently now that the laparascopic procedure has become the technique of choice, and that this increase cannot be justified by a change in indications for cholecystectomy.[4] Previous studies had suggested that as many as 14% of coronary artery bypass procedures[5] and 32% of carotid endarterectomies[6] are performed for inappropriate indications.

The observation of persistent differences in the way patients are treated from one health care setting to another has been referred to as the variation phenomenon.[7] It was first described by Wennberg who noted very large differences in the rates of tonsillectomy, hysterectomy, and prostatectomy in different small areas in Maine.[8] The existence of this phenomenon has been established beyond a doubt; the variations having been observed in the care of patients of all ages[9] and in all settings.[10] These differences cannot be explained by statistical or technical factors such as differences in case mix, etc. Nor has a cause been identified. Interestingly, studies designed to test the hypothesis that inappropriate use might explain geographic variations did not establish a relationship between the two phenomena.[11] Regardless, the fact that physicians often treat apparently similar patients in very different ways has raised doubts about the scientific bases for their decisions. To some we have become just another interest group struggling to maintain its economic self-interest. And, while this is not true, it is easy to see how these variations have eroded our stature as a profession. It is difficult to fathom how these variations might be considered to be of value.

Virtually every hospital or health care institution has a peer review mechanism and that is presumably true of the institutions in which these variations were documented. So it seems fair to say that peer review has had limited value in standardizing the level of care in different sites. Two incidents were reported by surgical and medical residents recently that strengthen this argument. Both involved patients who were operated on in spite of the fact that their cancers were inoperable. These were teaching cases and as such they were used ostensibly to teach medical and surgical resident physicians how to make decisions. In one of these instances, the surgery went so badly and the surgeons were so cavalier during the operation, that the surgical resident assisting at surgery was tearful as she described this experience to her professor.[12] To the credit of the Department of Surgery of the University of Hawaii, these incidents are being investigated to determine if the surgeon who performed these apparently unnecessary operations is a fit role model for students and residents. To the best of our knowledge, these cases have yet to be peer reviewed in the hospital in which the surgery took place.

There are of course technical problems that make peer review difficult. First, most peer review processes are directed at finding outliers, the assumption being that anyone who has had a bad result has been a bad physician. Physicians have difficulty doing this, especially in the closely knit culture of the medical center. Second, the process has been heavily influenced by lawyers so that the due process requirements are staggering. Third, there has always been a reluctance on the part of physicians to define quality in terms specific enough to be used as peer review standards. Finally, it has not been in the financial interest of the hospitals and medical centers whose responsibility it is to support and underwrite peer review activities to insist that they be done with conviction.

There have been advances, however, that should make us optimistic. In the first place we have the advantage of better data. Epidemiologic methods are improved and studies using these methods have resolved critical treatment issues. For instance, it is not difficult to identify treatment goals for patients with diastolic and systolic hypertension and diabetes mellitus. There is good data describing the preventive benefits of mammography, pneumococcal and influenza immunization, and prenatal care. The indications for coronary artery bypass procedures are clear, although compliance is not always certain.

There has also been experimentation with other methods to monitor, compare, and improve decisions made by health care providers.[13] Among the most controversial of these is total quality management or TQM, alias CQI, QIP and IQMS. Whereas this method is popular among health care administrators and managers, it has not been utilized by physicians to help with peer review. The reasons for this are many and complicated, although perhaps the most important is that there is only anecdotal evidence that it can, in fact, improve physician patient care decisions. However, it has been used successfully in industry to control variation and so it deserves more consideration.

Suffice it to say that three activities are emphasized as being important to total quality management. Berwick used these words to describe these activities as: 1) efforts to know the patient and to link that knowledge to the day-to-day activities of the organization; 2) efforts to mold the culture of the organization to foster pride, collegiality, and scientific thinking; and 3) efforts to continuously increase knowledge of and control over variation in patient care through scientific methods of data collection and analysis and action on data.[14]

It is the third activity that has stimulated the development of specific tools which may apply to our profession's responsibil-

ity for accountability. These tools basically provide ways to display and analyze data quickly. One of these is the control chart used in statistical quality control (SQC) (Fig 1).[15] The vertical axis measures some aspect of health care that is considered important to quality. This might be mortality rates, morbidity rates, mammography rates, utilization rates, etc. The horizontal line measures time. The solid line represents the mean of the observed values and the dotted lines represent upper and lower control limits. These limits would define expected or acceptable variations. The value of such charts rest in their ability to demonstrate quickly when observed measurements fall outside expected or desired limits.

Because the standards of quality are statistical rather than empirical they are more objective. This is especially true if they define outcomes rather than process. Early attempts at quality control focused on process factors which were determined by consensus. In those systems there was much room for argument about quality as it was often impossible to determine if the process factors were of value in determining the outcome of care in individual or groups of patients. There is less room for argument if quality is defined by outcome, especially if that outcome is based on scientific data. Thus, a study that determines there is value in maintaining systolic blood pressure below 160 mm Hg in effect develops a standard against which the care of individuals can be measured. There will be some variation but most measurements of systolic blood pressure in an individual or a group of individuals should fall below this upper limit. There is activity now in the field of outcomes research to develop and validate such standards.

One advantage of this method of quality control is that it focuses on systematic factors rather than on finding bad physicians who make bad decisions. Criticism of a peer places physicians in uncomfortable dilemmas. Any quality-control method that mitigates the discomfort should be welcomed. There are reported anecdotes describing successful reductions in variation by using this methodology. The Department of Clinical Epidemiology at the Latter Day Saints Hospital in Salt Lake City used TQM to reduce the rate of post-operative infections from 1.8% to 0.4%.[16] They started by noting that certain physicians had higher rates than others. Then they established that these physicians used different times of administration of pre-operative antibiotic prophylaxis. When these times were changed the infection rates dropped.

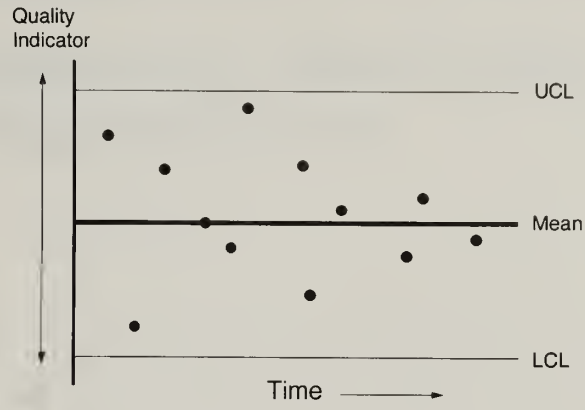
The rationality of TQM should not be used to diminish the requirement for the other activities noted. We must continually remind ourselves that:

Our profession's altruistic responsibility includes a commitment to make the benefits of health care available to everyone.

Peer review is a necessary part of our ethic even when it requires difficult decisions that involve our friends and colleagues. In order to make this process effective, standards of behavior must be clearly enunciated and strictly enforced. Unfortunately, these standards cannot always be objectively defined by a statistical analysis of outcome data. Those that define, for instance, the patient-physician relationship, the limits of accepting gifts from drug companies, the altruistic responsibilities of physicians, etc, can be developed only consensually by professional organizations. Membership should depend on conformance with these standards.

We should make every effort to determine what our patients need and want and direct our efforts to those ends. However, physicians are often in the best position to define futile care and it is their responsibility to refuse to prescribe such regimens regardless of the social and legal pressures to do so.

Fig 1.—Statistical Quality Control.



It would be exhilarating to re-experience the pride, joy, collegiality and scientific thinking that characterized our profession before it became an industry. Lifelong learning is critical to our profession, so continuing education should be its major priority. Professional organizations, schools of medicine and health care institutions should join to rekindle the fervor for knowledge that once inflamed our profession. It is especially important for these institutions to do so because they have been so influential in causing it to burn fitfully.

Unless there is a commitment to quality it cannot be achieved no matter how much data is collected or analyzed. Making such a commitment involves going beyond the materialism of economics and science into the spirit of our professional souls. It requires idealism, dedication, and sacrifice. If quality is to become a part of our professional ethos, it will be because we are sufficiently idealistic to define excellence, we are dedicated to its achievement, and we constantly challenge ourselves when we have not succeeded in doing so.

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Informed Consent: Its Legal History and Impact on Medicine

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The doctrine of informed consent dictates that a physician has a legal duty to disclose to a patient sufficient information regarding the inherent risks and benefits of a proposed course of treatment, and alternatives to the proposed treatment so the patient can intelligently exercise his or her judgment about whether to undergo that treatment. The development of the law regarding informed consent both nationally and in Hawaii is examined along with the current status of the law and its potential impact on physician behavior and health care delivery in Hawaii.

When a physician fails to obtain informed consent from a patient before proceeding with treatment, he or she has failed to practice up to the professional standard of conduct expected of physicians and can be sued under a theory of negligence. The basic elements of a cause of action based on negligence are: 1) a duty or obligation recognized by the law, 2) a breach of that duty, 3) a legally recognized causal connection between the conduct and the injury, and 4) actual loss or damage to another. Element four, actual loss or damage, is an essential part of a plaintiff's case, and without that element, there is no cause of action.[1]

National Case Law

Schloendorff v. Society of New York Hospital[2] is the initial case involving the physician's requirement to obtain informed consent. It was in that case that Justice Cardozo said, "Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient's consent commits an assault."[2] The court made no distinction between informed consent and consent. Forty-three years later, *Salgo v. Leland Stanford Jr University Board of Trustees*, established the legal duty of a physician to provide a "full disclosure of facts necessary to an informed consent."[3] The *Salgo* court said physicians had a duty to disclose, but allowed the physician to use his or her best discretion as to what disclosure was necessary for informed consent. The court said:

> Each patient presents a separate problem...the patient's mental and emotional condition is important and in certain cases may be crucial, and that in discussing the element of risk a certain amount of discretion must be employed consistent with the full disclosure of facts necessary to an informed consent.[3]

Several years later in *Natanson v. Kline*,[4] the court adopted the *Salgo* standard and held that the decision as to what to disclose was primarily a medical judgment; therefore, the duty was limited to disclosures that a reasonable physician would make in similar circumstances. The court concluded that under this professional standard "the patient is properly protected by the medical profession's own recognition of its obligations to maintain its standards."[4]

Canterbury v. Spence,[5] a federal court decision, changed the professional standard rule and developed a patient-centered standard of disclosure. The *Canterbury* court decided that "respect for the patient's right of self-determination on particular therapy demands a standard set by law for physicians rather than one which physicians may or may not impose upon themselves."[5] The court, however, recognizing that a physician would be hard-pressed to know exactly what each-and-every patient might deem relevant in a given situation, adopted what has come to be known as the "objective patient standard," based on "the average reasonable patient...with due regard for the patient's informational needs and with suitable leeway for the physician's situation."[5]

The court also acknowledged several exceptions to the disclosure requirement, including risks inherent in any procedure (such as infection), hazards that the patient is already aware of, and emergencies where there is no time to obtain consent and waiting for consent would greatly endanger the patient.[5] In addition, the *Canterbury* court recognized the "therapeutic privilege" exception to disclosure of risk information. According to the *Canterbury* court this privilege occurs when a patient might become "so ill or emotionally distraught on disclosure as to foreclose a rational decision, or complicate or hinder the treatment, or perhaps even pose psychological damage to the patient."[5]

In keeping with the negligence theory, the *Canterbury* court determined that, in addition to breach of duty, there must also be evidence of a causal connection between the breach and the injury, and that without injury or harm there was no actionable negligence unless the disclosure of risk information would have led the patient to opt for a different treatment, the failure to provide that information, while a breach of duty, is not sufficient for a cause of action under negligence theory. This should be objectively determined, ie, "what a prudent person in the patient's position would have decided if suitably informed of all perils bearing significance."[5]

In summary, *Salgo*, *Natanson*, and *Canterbury* established failure to provide informed consent as negligence, ie, malpractice. *Salgo* and *Natanson* said that the decision as to what to disclose was a professional decision, while *Canterbury* said it was to be based on what the patient would view as important. While *Salgo* and *Natanson* did not need to address the issue, *Canterbury* said that causation, ie, whether the information would have changed a decision, was to be based on an objective "prudent patient" standard.

The court's hesitancy to trust the accuracy of the plaintiff's memory and judgment is well supported by empirical studies. Research demonstrates that people do not accurately remember even their own predictions, and therefore, end up exaggerating what they thought they knew at a previous time. "This research does not imply that hindsight is a knowing misrepresentation of fact, for individuals will be truthful in their hindsight recall. The

hindsight bias arises from cognitive limitations on people's ability to recall past perspectives accurately."[6] A recent study done in Hawaii confirmed the unreliability of patients' memories. Ninety percent of 144 patients who had been informed of the risk of death from gallbladder surgery were able to correctly recall that warning prior to surgery. However, only three weeks after surgery 54% of those who correctly remembered before surgery stated that they had *not* been told that death was a potential risk.[7]

Hawaii Law

In Hawaii, both statute and common law make failure to obtain informed consent a medical tort.

In 1970, two years before the landmark *Canterbury* decision, the Hawaii Supreme Court, in *Nishi v. Hartwell*,[8] established its position on the doctrine of informed consent. The court, citing the *Salgo* decision, stated:

> The doctrine of informed consent imposes upon a physician a duty to disclose to his patient all relevant information concerning a proposed treatment, including the collateral hazards attendant thereto, so that the patient's consent to the treatment would be an intelligent one based on complete information...However, the doctrine recognizes that the primary duty of a physician is to do what is best for his patient and that a physician may withhold disclosure of information regarding any untoward consequences of treatment where full disclosure will be detrimental to the patient's total care and best interest.[8]

The court held that the standard to be used in determining whether adequate disclosure had been made was a professional standard, ie, "by reference to relevant medical standards."[8] This meant the plaintiff had to prove with expert medical testimony that the relevant medical standard had not been met.

In 1976, in response to what was perceived as a medical malpractice crisis, the Hawaii legislature, to lend some potential protection to the physician, enacted legislation that attempted to develop standards for informed consent. The act stated: "The standards established by the board shall be *prima facie* evidence of the standards of care required but may be rebutted by either party."[9] The legislation also codified the common law exception to risk disclosure in the case of emergency treatment. The law did not directly address the standard of disclosure or the standard of causation.

In 1983 the legislature amended the statute to more clearly identify the scope of the disclosure. The statute stated:

> If the standards established by the Board of Medical Examiners include provisions which are designed to reasonably inform a patient, or a patient's guardian, of:
> 1) The condition being treated;
> 2) The nature and character of the proposed treatment or surgical procedure;
> 3) The anticipated results;
> 4) The recognized possible alternative forms of treatment; and
> 5) The recognized serious possible risks, complications and anticipated benefits involved in the treatment or surgical procedure, and in the recognized possible alternative forms of treatment, including nontreatment, then the standards shall be admissible as evidence of the standard of care required of the health care providers.[10]

Again, the legislative language was ambiguous as to whether the standard of disclosure was patient centered or professional.

In 1985, in *Leyson v. Steuermann*,[11] the Intermediate Court of Appeals examined the doctrine of informed consent. The *Leyson* court, noting ambiguity in the language of *Nishi* and HRS §671(3) (1976), did not address the standard of disclosure. The court did reaffirm, however, the previously discussed exceptions to the informed consent doctrine.

Applying the facts of the case to its interpretation of the law, the *Leyson* court described the tort of negligent failure to disclose risk information as:

> 1) duty to disclose...risks...2) breach...[of the] duty; 3) injury; and 4) breach of duty was a cause of injury in that: a) [the] treatment was a substantial factor in bringing about [the] injury and b) [the patient], acting rationally and reasonably, would not have undergone the treatment had he been informed of the risk of the harm that in fact occurred; and 5) no other cause is a superseding cause.[11]

By defining element 4 b in terms of the specific patient "acting rationally and reasonably," the court broke with previous courts by blending objective and subjective aspects of a patient oriented standard of causation:

> [W]e opt for the application of a modified objective standard that determines the question [of causation] from the viewpoint of the actual patient acting rationally and reasonably.[11]

This new "modified objective" standard examined causation from the view of the "actual patient [subjective component] acting rationally and reasonably [objective component]."[11]

In *Mroczkowski v. Straub Clinic & Hospital, Inc*,[12] the Intermediate Court of Appeals then held that before a plaintiff can argue that the duty to disclose a risk was negligently performed, he or she must prove that the harm complained about was a probable risk of the operation and that the defendant knew or should have known of that fact. The risks to be disclosed were "all recognized serious possible risks of harm and complications that the physician knew or should have known of, plus other information."[12]

Once again the court declined to address whether the question of seriousness of the risk was to be "answered from the point of view of the patient, the physician, or otherwise."[12]

Keomaka v. Zakaib[13] is the most recent decision by the Intermediate Court of Appeals regarding the doctrine of informed consent. It then reaffirmed the need for causality to be established vis-a-vis both the treatment rendered and the nondisclosure of the risk, ie, that the injury was caused by the treatment and that if the risk had been disclosed the patient would not have undergone the treatment. The court also addressed the question of whether a patient can be contributorily (or more correctly comparatively) negligent when a physician attempts to obtain informed consent. This issue could turn out to be the most important aspect of *Keomaka*.

The court held, in firm and unequivocal language, that "contributory negligence has no place in an action for failure to obtain informed consent."[13] The court stated the argument that Keomaka's failure to read the informed consent form was contributory negligence was without merit, and the duty to inform rests with the physician:

> [B]ecause of the superior knowledge of the doctor with his expertise in medical matters and the generally limited ability of the patient to ascertain the existence of certain risks and dangers that inhere in certain medical treatments, it would be unfair and illogical to impose on the patient the duty of inquiry or other affirmative duty with respect to informed consent.[13]

The court specifically stated that the mere signing of a printed

consent form (even one that said that the doctor had discussed all risks and alternatives) would not fulfill the physician's duty and "is not a substitute for the required disclosure by the physician."[13]

The court did not discuss whether or not the physician's duty could be carried out through affirmative acts of other hospital personnel such as nurses or pharmacists, and if so, what duty the physician had to make sure that the information had been understood by the patient. This point is of more than academic interest because many hospitals now use nurses and pharmacists to provide patient education regarding disease and treatment.

Summarizing Hawaii law: Failure to provide informed consent is a tort, with the parameters of the tort defined in statutory and common law. Treatments, alternatives to treatment, and all recognized serious possible risks are to be disclosed. While ambiguous, it seems that a professional standard is to be used to decide what to disclose. A *modified objective* standard (the actual patient acting rationally and reasonably) is to be used to determine if the disclosure would have changed the patient's decision. The plaintiff must prove both that a risk was not disclosed *and* that if it had been disclosed, the patient, acting rationally and reasonably, would not have undergone the treatment. Finally, in Hawaii the patient cannot be contributorily negligent by failing to ask questions, by signing a form that he or she has not read, or any other act of commission or omission related to the informed consent process.

Discussion

Current Hawaii law, pointing to the importance of protecting patient autonomy, requires physicians to obtain informed consent from their patients before proceeding with treatment. It is commendable and appropriate that Hawaii's legislature and courts are interested in protecting patients. However, some of their assumptions about the role of informed consent in protecting a patient's autonomy (and even what autonomy is) are open to examination. The autonomy rationale for informed consent argues that all human beings have a right to make their own decisions, and that any limitation on the information provided to patients is an affront and infringement on that right. Yet the Hawaii courts ignore at least two significant realities with their rulings:

First is the relationship between autonomy and responsibility. Hawaii law holds that the patient has *no* responsibility relating to the process of informed consent. Ironically, the court bases this idea of no responsibility on the very thing that it seems to question: The professional expertise and judgment of the physician. The court feels that the physician's expertise vis-a-vis the patient places all responsibility for initiating, maintaining, and structuring informed consent on the doctor. This appears contrary to the idea that the patient is an autonomous individual, for if that were so, he or she would have some responsibility for the choices made, ie, to sign or not sign a form indicating that something had happened when in fact it had not. More important, the *no responsibility* standard negates the idea that the patient has any responsibility for the nature of the doctor-patient relationship and the communication that exists in that relationship. It seems the courts' perception of the patient is passive, noncontributing, and not responsible is itself a paternalistic and demeaning view of the patient. If it is paternalistic of physicians to think that they know what is best for the patient, it is equally paternalistic of the courts to proclaim patients incapable of and not responsible for shaping the discourse between them and their doctors. It is this relationship between doctor and patient that is the key to true informed consent, and both parties must take responsibility for their part in that relationship.

The courts also continue to treat informed consent as an event rather than a process. They seem to think that medical decision making occurs at a fixed time and place, and that a course of treatment, once decided, is an essentially fixed recipe. The reality is that clinical decision making is an ongoing process that is constantly altered by numerous sources of feedback, including the disease and its response to earlier treatment interventions. A better view of informed consent is that it is a process between two people who are involved in a relationship with each other.

Burt[14] and Appelbaum[15] have discussed this view of informed consent and present a perspective that it much more relevant and meaningful to the actual context within which informed consent discussions occur. As they point out, the process of disease and death creates fear, anxiety, and/or uncertainty in both doctor and patient. As humans, both react to these emotions with attempts to control the situation, the doctor through prescribing a treatment and the patient through controlling what will be prescribed. Thus what is needed between physician and patient is less acquiescence of one to the other, but rather more dialogue, discussion, and understanding of the nuances of the bio-psycho-social situation in which the two people find themselves. In this manner each participant's fears and uncertainties can be exposed and confronted. While the ultimate decision might or might not be the *best* or most rational, it will be made the way many decisions are made—on the basis of a relationship between two people who recognize the humanity of the other.

Finally, and from a somewhat different perspective, whatever is thought of the courts' logic, its current ruling on the role of contributory negligence in informed consent cases may in fact affect aspects of patient care. By holding that the routine consent forms patients often sign on entering a facility have no legal significance in the absence of evidence that the physician actually performed his or her duty to disclose risk and alternative treatment information, it signifies a need to move away from the *paper consent* documentation via various forms, and instead to focus on physician documentation of actual discussions with patients. It should also lead to increased use of interpreters, so as to make sure that language limitations don't result in lost information. Note that this action would also be consistent with Burt and Appelbuam's views of informed consent processes.

In addition, adherence to both the spirit and letter of the law can improve patient care. First, physicians will be required to more clearly justify their clinical interventions, rather than to rely on the old saw that *it's the usual procedure*. Instead they should be more reflective about their treatment recommendations and the effect on their patients. This may in turn change patient choices. For example, a program at Dartmouth Medical School documented that after viewing a video that gave information on watchful waiting versus surgery for benign prostatic hypertrophy, one-third of the patients who had favored surgery changed their minds.[16] Second, because the process of informing patients often requires education about diseases, treatments and procedures, it is likely that other professionals will become involved. With their developing professionalism, nurses and pharmacists have increased their teaching activities with patients. For example, critical-care nurses[17] and pharmacists are becoming more involved in patient education, and thus contributing to the process of informed consent.

However, hospitals might negate these gains if they interpreted the court's holding on the physician's duty to provide informed consent as insulating the hospitals from any liability for failure to obtain informed consent. It would be ironic indeed

if, in attempting to protect patient autonomy, the court's holding negatively affected this move toward increased patient autonomy by allowing hospitals to decrease nonphysician patient education activities.

In the past hospitals generally have not been held liable by courts in informed consent cases.[17-21] However, recently there has been the suggestion that medical malpractice, including informed consent torts, should be viewed as enterprise liability. Under this theory, hospitals would become liable for the torts of the physicians on their medical staffs, and physicians would not need malpractice insurance for their hospital-based activities. Given the increasingly accepted view of a health care team and moves toward integrated delivery systems, it would be quite reasonable for the legal (and medical) system to focus on institutional liability and prevention.

> The best vehicle for identifying and dealing with such incidents is the organization in which the doctor practices. The memory of the institution can serve to record and piece together patterns in a host of apparently idiosyncratic incidents. The collective wisdom of the hospital team can be pooled to devise feasible procedures and technologies for guarding against the ever-present risk of occasional human failure by even the best doctors...Not only does the organization have a greater capacity to establish such quality assurance programs, but is also more likely to be influenced to do so by the incentives created by tort liability.[22]

The third potential benefit associated with the imposed duty to inform patients of risks and alternatives was alluded to previously. Providing additional information may result in a decrease in unnecessary health care expenditures. As noted previously, the provision of additional information resulted in an increase in the number of patients choosing the less expensive medical treatment option.

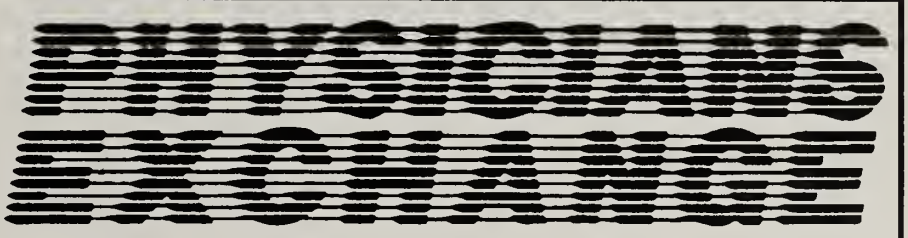
The hidden dangers in excessive informed consent procedures are at least twofold. First is that out of defensiveness physicians and hospitals might expend precious physician and other personnel resources trying to achieve a level of informed consent that is attainable only in the world of law review articles and court pronouncements. The second is the real possibility that by providing excessive information on rare but possible risks, patients will be frightened away from procedures where the actual risk benefit ratio is highly positive.

Conclusion

The aim of Hawaii's legislature and courts has been to protect patient autonomy and to ensure that medical choices are made from an informed position. However, the nature of the legislative and litigation processes have kept them from addressing broader questions relating to how patients actually get information about their medical treatment, how that affects physician-patient relationships, and how we should work to change those relationships to provide better medical care while at the same time meeting our obligation to respect each patient's individuality.

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Honoring the Right To Die in Medical Emergencies

Jeffrey P. Crabtree JD, Anita M.L. Lo RN, JD

On July 1, 1995, Hawaii's new DNR or comfort care only law will go into effect. Under specific circumstances, the new law allows and directs ambulance/emergency medical services personnel, first responder personnel, and others to honor the wishes of terminally ill patients who do not want to be resuscitated during a medical emergency. The law also protects emergency personnel from liability if they have a good-faith belief that resuscitation is necessary.

The Current Situation

Ambulance or other emergency personnel usually must use all available resuscitative measures if an emergency situation arises—even with acutely terminal patients—and even if it is against patients' wishes as expressed in their valid living wills.

This is often a no-win situation for everyone involved. For even the end-stage terminally ill person, the specific desire not to be resuscitated is ignored, and often their agony is prolonged. Family members must endure a sense of betrayal for not honoring the last wishes of a loved one. And the emergency ambulance personnel are often left with a feeling of helplessness because they must disregard a patient's wishes in order to perform their legal duty.

Effective July 1, 1995, this scenario will change, thanks to the enactment of Act 173, approved on June 21, 1994 by Governor Waihee, and now codified as Section 321-229.5 of the *Hawaii Revised Statutes* (HRS).

What the New Law Provides

HRS Section 321-229.5 allows emergency medical services personnel,[1] first responder personnel,[2] and health care providers[3] to provide *comfort care* for terminally ill persons. The patients must be certified as terminally ill by their physicians and must have a written comfort-care-only document[4] and an identifying bracelet or necklace.[5]

Terminally ill persons can certify in the written document that they do not want chest compressions, rescue breathing, electric shock, or medication, or all of these, to restart the heart if their breathing or heart stops.[6]

Comfort care includes administering oxygen, airway suctioning, splinting fractures, pain medicine, and other measures required for comfort.[6]

The Documentation/Identification Required and Other Safeguards

In order for emergency personnel to honor a terminally ill person's wishes, the new law requires a written comfort care only document, signed by the patient, the patient's physician, and one other adult who personally knows the patient,[7] certifying 1) the person is a terminally ill patient of that physician,[8] and 2) the person directs emergency medical services personnel, first responder personnel, and health care providers not to administer chest compressions, rescue breathing, electric shock, or medication, or all of these, to restart the heart if the person's breathing or heart stops, and directs that person receive care for comfort only.[9]

The original document, containing both certifications and all three signatures, is to be kept on file with the patient's physician.[10] The patient receives two copies, one of which will be used to order the identifying comfort care only necklace or bracelet, prescribed by a physician.

The comfort care only document can be revoked at any time by the patient, either verbally or by removing the identifying bracelet or necklace.[11]

In addition, the new law also provides that if the emergency medical services person, first responder, or any other health care provider believes in good faith that the provider's safety, the safety of the family or immediate bystanders, or the provider's own conscience requires the patient be resuscitated despite the presence of a comfort care only bracelet or necklace, then that provider may attempt to resuscitate that patient, and neither the provider, the ambulance service, nor any other person or entity shall be liable for attempting to resuscitate the patient against the patient's will.[12]

Furthermore, the new law provides for an anonymous tracking system to ensure against abuse and to evaluate the success or failure of the system.[13]

Background and History of HRS Section 321-229.5

The revised version of the bill[14] was supported by testimony from the Executive Office on Aging, the Hawaii Department of Health, and the City and County of Honolulu, the Hawaii Chapter of the American College of Emergency Physicians, and the Hawaii Medical Association. The Hawaii Right to Life chapter did not submit testimony, but participated in drafting the language.[15]

What's Happening Nationally

As of June of 1994, 22 states have statutes that authorize non-hospital "Do not resuscitate" orders.[16]

What Is Currently Being Done To Help Implement Hawaii's New Law?

The Department of Health Emergency Medical Services Systems branch is developing the protocol for the CCO-DNR order. According to program specialist Jamie Go, the DOH is reviewing bids for suppliers of identifying bracelets and/or necklaces. He expects to send information packets about the CCO-DNR orders to all physicians in February, 1995.

Checklist For Hawaii's New DNR Bracelet or Comfort Care Only Law

1. The new law is not effective until July 1, 1995.
2. The patient must be at least 18 years old.
3. The patient must be diagnosed with a terminal illness.
4. The physician should discuss the situation with the patient and explore the various options, including a living will and comfort care only–do not resuscitate (CCO-DNR) order.
5. If a patient requests a CCO-DNR order, the physician should fill out the form, which should be signed by the physician, the patient, and an adult witness who personally knows the patient.
6. The physician should keep the original, signed CCO-DNR form in the patient's medical records, and give two copies to the patient.
7. The patient should keep one copy of the form for his or her personal records and send the other copy to the designated supplier of the identifying CCO-DNR bracelet or necklace.
8. The bracelet or necklace supplier sends the copy of the CCO-DNR form to the state emergency medical services office for monitoring purposes.
9. The patient wears the CCO-DNR bracelet or necklace, which will be honored by emergency medical services personnel, first responder personnel, and health care providers absent a good faith belief as described in the law.
10. If a patient changes his or her mind and wants to revoke the CCO-DNR order, he or she can remove the bracelet or necklace, or convey their change of mind to the emergency medical services personnel, first responder personnel, or other health care providers.

Acknowledgements

The authors gratefully thank Mr Jamie Go, EMT, of the Department of Health emergency medical services branch. He has cheerfully shared all his information, was instrumental in drafting the bill and helping it get passed, and is currently setting up procedures for the law's effective implementation.

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1. *Emergency medical services personnel* are mobile intensive care technicians or emergency medical technicians who are certified or licensed in Hawaii. HRS 321-222 (eff 7/1/95).
2. *First responder personnel* are those who have successfully completed a U.S. Department of Transportation–approved first responder course in emergency basic life support; for example, firefighters and lifeguards. HRS 321-222 (eff 7/1/95).
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An Efficient Way to Do the Wrong Thing

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Britain's national health system (NHS) has been embattled since Thatcherism undertook to privatize it. This Britannic version of the new medicine is a hybrid of a neglected, underfunded shadow of the NHS and robust free-market capitalism. The NHS that the Tory government administers is aptly described as topless, bulging in the middle, and suffering chronic battle fatigue at the bottom. The quality of leadership in the NHS has plummeted at the same time thousands of middle managers have been added to prod the frontline caregivers.

The Britannic New Medicine has thrown the medical profession into a *deep re-think of its very purpose.* Recently, the head of a major hospital trust announced: "A physician's first loyalty is to the hospital trust, then to his profession and then to his patients." The outcry from physicians was strong, but clearly the embattled profession is nearing exhaustion. "Everywhere big, ugly buyers are assuming greater power, consumers are more sophisticated, new technology is revolutionising practice, and old ethical issues are being broached in awkward new ways."[1-4] The engine of change that is afoot is found throughout society—it faces lawyers, accountants, civil servants, university faculty, and now quite acutely, doctors. In business the new arena is global and the conditions for survival are unclear and ever-changing requiring continuous retooling, redundancies, and retraining. In health care a major feature of this new era is that these sea-changes are taking place in a world where resources for medicine are limited.

Problems of resource allocation within medicine arise at a number of different levels. How much of a society's resources should be devoted to health care at all, as opposed to housing or defense? Given some overall allocation of resources to health care, how should these resources be distributed among various different sorts of health care expenditure: For example, primary versus hospital care, or preventive medicine versus care of the already ill. Within such broader categories, how should different specializations be allocated: For example, in the case of hospital medicine between cardiac and obstetric units. And both within and across specializations, what should be the relative allocation for different specific forms of treatment: Kidney transplants versus renal dialysis or hip replacements versus by-pass surgery. Questions of this sort are lumped together as problems of macroallocation. When faced with the relevance of the cost of care, the morally squeamish invoke the *macro/micro* distinction, asserting that economic considerations are morally relevant only to macro allocation decisions and that cost has no relevance in the micro medical/moral decisions of clinical practice.

Health Economists' Proposal of QALYs

Health economists have devised a vehicle for resource allocation—the Quality Adjusted Life Year or QALY. The QALY analysis in the eyes of NHS managers is now on even terms with the status quo decision making which has been characterized as MSW (management by shroud waving). In the words of Mooney: "MSW where individual clinicians press for more resources for their patients by 'announcing publicly that unless resources are increased patients will suffer and die unnecessarily.' Each individual clinician has, after-all, spent his professional life assessing his patients' distress and disability and the risk to their lives posed by disease."[5] MSW calls on the physician's abilities as ravers rather than reasoners, and thereby leaves them searching for a better method for allocation decisions.

Economists with an interest in health care introduced the concept of QALY in the 1980s as the key to rational resolution of resource allocation decisions in a time of scarcity. Initially, such economists offered QALYs as a cure for the haphazard or otherwise ethically inappropriate allocation of scarce medical resources without distinguishing between macro and micro allocation decisions. Currently, most major advocates see QALYs as a macro allocation tool while others would apply it throughout health care including case-by-case decisions in clinical practice.[6-10]

The health economist argues that we should prioritize interventions in terms of the quantity of well life measured in quality adjusted life years (QALYs) produced by the intervention per unit of cost. This implies that an intervention that takes N people from a bad condition (including dying) to the state of healthy for X years should have priority over an intervention that takes N *other* people from the same bad condition to a state of moderate illness for the same number of years. This sort of analysis gives confidence to resource managers, and those who have a consequentialist view of morals. There does seem to be something right about an attempt to rationalize the allocation of scarce medical resources, to examine our priorities in light of argument and evidence of their relative efficacy. The health economist view as represented by Alan Williams appears positively benign: "The objective of economic appraisal is to ensure that as much benefit as possible is obtained from the resources devoted to health care."[11]

Elaboration of QALYs

A natural response to allocation problems is to say: One should put one's resources where they will do the most good. Perhaps one should, but what does one mean by "the most good"? One kind of good that health care can achieve is saving lives. So one measure, albeit a very crude one, of the good that health care does would be the overall extension of life expectancy that it generates: Years of life gained. This is where QALYs come in. An extended passage from Britain's major advocate of QALYs is in order.

> "The essence of a QALY is that it takes a year of healthy life expectancy to be worth 1, but regards a year of unhealthy life

expectancy as worth less than 1. Its precise value is lower the worse the quality of life of the unhealthy person (which is what the 'quality adjusted' bit is all about). If being dead is worth zero, it is in principle, possible for a QALY to be negative, ie, for the quality of someone's life to be judged as worse than being dead.

The general idea is that a beneficial health care activity is one that generates a positive amount of QALYs, and an efficient health care activity is one where the cost per QALY is as low as it can be. A high priority health care activity is one where cost-per QALY is as low as it can be. A high priority health care activity is one where cost-per-QALY is low, and a low priority activity is one where cost-per-QALY is high. Thus an activity that generates only two QALYs but costs only £200 (so that each QALY costs £100 to produce) is more efficient than one that generates 5 QALYs but costs £2,000 (so that each QALY costs £400 to produce).[12]

What is new or special about QALYs? The QALY is a measure which: First, combines a) life expectancy, b) quality of life, and c) reflects the values of the community served; second, it is welfarist, ie, designed to promote the greatest welfare (health) of the community served; third, it incorporates democratic and equalitarian features; and fourth, it is a rational/objective decision procedure—as scientific as one can get in the social sciences.

There are four assumptions that are required for a QALY analysis: 1) objective of health care system is to improve health, 2) the general public is competent to express its preferences on health, 3) it is possible to elicit meaningful valuation statements from people about differing degrees of health, and 4) it is possible to aggregate these valuations.

How are QALYs constructed or computed? Williams points to research that shows there are numerous ways for health economists to do this, one of which is called the Rosser illness states index. The initial phase of obtaining the "quality adjustment" involves Rosser's system of describing eight states of health[13] and four degrees of distress (none, mild, moderate, and severe). These illness states are meant to be very general so that they could cover a wide range of actual experiences of ill-health. Matched with the four distress levels the illness states generate 32 possible *disability-distress states.*

Rosser obtains the values (Table 1) by asking participants to rank 29 states (three lack meaning) in order from best to worst. State I-A (No disability, no distress) is clearly the best, but views vary considerably about the worst state. Respondents are to assign "1" to the healthy state, "0" for death, and a negative value for worse than death. Thus one might assign a .5 to state VI-C, with the implication that two years of life expectancy in that condition is of equal value to one year of healthy life expectancy. The values found on the table provide the matrix derived from 70 respondents. The concept of QALYs does not depend on acceptance of Rosser's index, many others have been devised by busy social scientists. At this point we need only grasp what these health care economists are up to.

Once we get this far it is a matter of arithmetic. We take what we know about the costs of procedures, probability of outcomes of treatments/procedures, and with the Rosser index, we are able to compute the QALY and the comparative efficiency of our medical efforts. A hypothetical example from Williams and his formula: "A treatment may offer a 0.8 probability of 10 QALYs, a 0.1 probability of none, and a 0.1 probability of -5 QALYs (ie, the loss of the equivalent of five years of healthy life expectancy)...we could say that the 'expected' value of the benefits from treatment is (0.8x10) + (0.1x0) + (0.1x-5) which is 8 + 0 - -0.5 or 7.5 QALYs."[14] Given adequate information health economists can generate tables that report the "cost per QALY" of practices and procedures from family practitioner's advice to stop smoking to hospital dialysis (Table 2).

Table 1.— Rosser's Valuation Matrix: 70 Respondents

DISABILITY RATING	DISTRESS RATING A	B	C	D
I	1.000	0.995	0.990	0.967
II	0.990	0.986	0.973	0.932
III	0.980	0.972	0.956	0.912
IV	0.964	0.956	0.942	0.870
V	0.946	0.935	0.900	0.700
VI	0.875	0.845	0.680	0.000
VII	0.677	0.564	0.000	-1.486
VIII	-1.028	N/A	N/A	N/A

Fixed points: Healthy = 1 , Dead = 0

Advocates of the QALY approach are quick to point out that they are not offering a precise answer to the question, how many QALYs a given period of life adds up to. Rather they are offering a rational approach to determine how resources should be allocated. Not only does their method reveal that some treatments are more cost-effective that others, but it produces the same outcome even if we experiment with the assignment of values we put in the equation. This is part of what Williams meant earlier when he says that the QALY analysis does not depend on the Rosser index, other indexes result only in differences in degree and leave in tact the rankings of treatments as found on Table 2. Given the situation of limited resources and more than enough beneficial procedures to exhaust resources, some beneficial procedures cannot be undertaken. QALYs provide us with an objective guide to make the needed choices.

Table 2.—Cost per QALY Estimates for North America 1983 Data

Procedure	Cost per QALY
Coronary artery bypass grafting (CABG) for left main coronary artery disease	4,200
Neonatal intensive care (1000 to 1499 gm)	4,500
T4 (thyroid screening)	6,300
Treatment for severe hypertension in men aged 40 plus (diastolic 105 mm Hg)	19,100
Treatment for mild hypertension (94 to 105 mm Hg)	19,100
Estrogen therapy for post-menopausal symptoms in women without prior hysterectomy	27,000
Neonatal intensive care (500 to 999 gm)	31,800
CABG for single vessel disease, moderately severe	36,000
School tuberculin testing program	43,700
Continuous ambulatory peritoneal dialysis	47,100
Hospital dialysis	54,000

Table distributed at a BMA conference, 1986, Oxford, England

It is difficult to sustain a convincing skepticism about a proposal that offers a method that reveals a way to select among treatments/procedures which will confer greater aggregate benefit than less. It is for this reason that the QALY analysis is being taken seriously in decisions regarding allocation. But this is not

to say that QALY considerations should be regarded as decisive. QALYs need to be measured against considerations of just distribution of the harms and benefits.

Supposing that we are clear about what it is that we are trying to measure, there would still be room for considerable skepticism about the extent to which it was possible to measure it. The idea of putting a yardstick up against a life and reading off some numerical value representing its quality is worrisome, if not preposterous. Philosophers have long debunked the efforts of those who have attempted to divine ways to compare the value of one year of life under circumstances A with those of circumstance B *even* if it were the same life. It is clear that the QALY analysis involves troublesome interpersonal comparisons and asserts that it is a common measure in which everyone's claims of happiness are in some sense comparable and additive. This is a classical problem for utilitarian efforts to compare "utilities" and the health care economists seem to be up to much the same business. Many of the numerous objections to classical utilitarianism have a bearing on the plausibility of the efforts of the health economists. The ongoing discussion about utilitarian theory is robust, indicating that many issues are still quite unresolved.[15]

Doubts about QALYs

Economists say that in allocation decisions the key question is a matter of efficiency, more health for the same money. The health economists seem to be engaged in a bit of covert imperialism by eclipsing the ethical dimension of the question for which there is no scientific (economic) answer. Furthermore, the apparent objectivity of the economic approach is very seductive to those who have budget targets to meet and thereby is extremely dangerous.

The problem of ranking values is an ancient one and a great deal of human genius has been expended an effort to quantify value. The ancestry of the modern efforts is easily traced to the British utilitarian philosophers and social reformers, most famously, Jeremy Bentham.[16] There is rich literature detailing the unsatisfactory efforts to develop a *felicific calculus.*

Who's pleasure (happiness) is to count? Well anybody's and everybody's. The objective of government is to create a harmony of interests such that the happiness of as many people as possible is promoted. Where arianism goes wrong is that it is promoting happiness in the abstract rather than the happiness of persons (it separates the individuals from the happiness by abstracting the happiness). Utilitarianism is the combination of welfarism, sum-ranking, and consequentialism. Such a theory separates value from valuers and merges the utility bits together as one total lump. Welfare economics and preference theory are efforts to overcome these difficulties.

Some concerns that shed serious doubts on the moral status of this method of resource allocation: The concerns can be arranged as 1) questions about valuing, 2) the distinction between descriptive and normative ethics and the relevance of democracy to morals, 3) questions about justice, and discrimination against the elderly and the disadvantaged.

Questions about Valuing

Recently there have been numerous efforts to determine what we value in health care and how we would rank services and interventions. The community consensus-building method used in Oregon to rank health care interventions is one effort. Social scientists have conducted numerous studies to establish health indexes. A study conducted in New York of health graduates and health professionals had results that should raise doubts about objective, democratic efforts to determine preferences.[17] The subjects were asked to assign numerical values to saving lives of people in different states of illness in relation to saving lives of healthy people. The priority was clearly for the healthy. For instance, saving the life of a healthy person was considered approximately equivalent to saving the lives of two people with visual impairment, and three people sitting in wheelchair and unable to work.

Recent studies in Norway suggest that Norwegians reject the primary value of health economists, efficiency, in favor of life itself.[18] Thus, efforts to prioritize on the basis of gained life years is rejected as incommensurable with gained lives. The vast majority in this study held the view that individuals are equally valuable and equally entitled to treatment irrespective of differences in their health or levels of disability.

The health economists are quick to point out that the QALY approach is not dependent on any particular index. But from the two examples mentioned a very pressing question comes to mind: What is it that we have when we have the QALYs based on any index? What is the moral basis or foundation for this standard? Whether we use the Rosser, New York, Norwegian, Oregon, or other indexes[19] what we have is a standard based on a quantification of the values of those in the study. Nothing more.

If we are a mean society we will do X, if we are sympathetic, we will do Y. Such an analysis does not tell what we ought to do, nor does it tell that X or Y is morally defensible. Niggardly and liberal societies will produce different QALYs.

Another concern that must be mentioned has to do with our ability to measure "quality of life" in any meaningful way. Part of the skepticism about any index that the health economists will use is based on doubts about measuring "quality." There are serious unresolved problems about quality measurements, especially interpersonal comparisons and evaluations. These indexes at best tell us about the people who participate. If you change the life experience of the index-making group, you could get very different results. The views of cancer patients, quadriplegics, New Yorkers, Norwegians, Oregonians, etc, on the quality and value of their respective lives are very interesting but certainly incommensurable. And surely there is something utterly preposterous and morally outrageous about the health managers who take seriously the New Yorkers' view that my life is worth the life of three wheelchair-bound people. Something has gone wrong with the new math of health economics that it could support such a view. Yet the QALY math of the advocates of the new medicine implies this as well as other moral outrages.

Descriptive and Normative Ethics

Two points need to be made at this juncture. First, the outcome of such studies are merely a reflection of the different study groups. Surely the inheritances of the past and the differences in cultural conditioning affect the preferences of the subjects. The Norwegian adherence to the principle of equal entitlement to treatment has long been reflected in their national health service with very limited out-of-pocket payment. Thus they do not make good subjects for QALY index studies. On the other hand it is not surprising that in the American studies economic considerations are emphasized in these indexes of values. Bernard Williams points out: "Utilitarianism is not surprisingly the value system for a society in which economic values are supreme; and also, at

the theoretical level, because quantification in money is the only obvious form of what utilitarianism insists upon, the commensurability of value."[20] The differences between the New York and the Norwegian study does not surprise and raises serious doubts about the "objective quality" of the QALY standard for allocation decisions.

The echo of utilitarian ethics runs strong through the QALY approach. In its narrowest form utilitarianism seeks the greatest happiness of the greatest number when happiness means pleasure and absence of pain. The health economists seek to eliminate inefficiency (reduce pain at the lowest cost) through discovery of a common measure, QALYs. But a central element of the common measure that they have devised is an uncritical account of the attitudes and values of the subjects of the index generating studies.

Second, ethicists are not given to doing ethics by opinion poll or the results of social scientists' descriptive studies. Allocation decisions based on QALYs utilize a democratic approach of determining the values of society and conclude that such an allocation is morally right. Such a conclusion does not follow. Even if their index was sufficiently representative and free from value loading by the evaluators that does not justify the move from an account of what their sample believes about states of life to how resources ought to be allocated. If their index is of how matters ought to be, the question remains what makes democratic majorities morally right? If on the other hand the index does not purport to tell us "how matters ought to be," then the health economists are not addressing our ethical problem. They are not answering the question: What would be a morally defensible allocation? Rather they are telling us here is an objective method of determining what collectively we would do. Mind you, not what we *ought* to do, just what we would do to most efficiently use our resources.

Reformers and advocates for the disadvantaged in society know better than appeal to what is commonly done or thought. The status quo is what they are trying to change. Rather they appeal to moral or legal arguments in order to obtain equal or sensitive treatment. Descriptive morality does not answer the normative question.

Questions about Justice

Allocation according to QALYs seemunjust in that it would favor those who are more healthy or fortunate. Unlike the classical utilitarianism of Bentham where "everybody to count for one, nobody to count for less than one," the health economists by counting QALYs will allocate to the fortunate, healthy, or young over their unfortunate, unhealthy, or elderly counterparts. Consider two candidates for a treatment where the only difference is that one is suffering from a condition (say, emphysema) unrelated to the immediate problem and the other is not. Assume that the quality of life of the emphysema patient is significantly impaired but there is no reason to suppose it will in any way affect the chances of the treatment under consideration proving successful. Assume also that both patients have an equally intense wish to go on living. Under the QALY assignment of resources the treatment goes to the person without the emphysema. It is a straightforward matter of arithmetic and probabilities. The QALY value for the treatment goes up for every year the one person is likely to live over the other. Clearly this system favors the fortunate and visits further misfortunes on the unfortunate by denying benefits in allocation decisions.

A parallel account works for age or any disability that shortens a person's life. Replace "emphysema" with "age/older" and you get the same result. Other things being equal, more QALYs are generated by expenditures on the young than the old and on the healthy than on the disabled. QALYs favor the young and the more healthy in any given selection.

A central value of health care has always been to assist those most unfortunate. Paying attention to the unfortunate, those whom nature has dealt a poor hand, has long been a measure of the moral quality of a society. Theories of social justice, certainly since Rawls,[21] have had to be sensitive to a principle that requires that those least well off must be benefited if anyone else in society is to benefit. The health economists' QALY allocation scheme is not only utterly blind to this principle of justice, QALYs fail to require that the worst-off groups' level of well-being is raised whenever another groups' is to be raised. In fact they allocate in a manner that often increases the disadvantages of those with whom nature has dealt harshly. Rejecting QALYs as an allocation tool Harris enjoins: "What we should not do is abandon those whose quality is poor to concentrate on the fortunate. QALYs require us to do precisely this."[22]

Williams has denied that QALYs are ageist by pointing out that they support the funding of hip replacements, an intervention overwhelmingly for the elderly. This denial is unconvincing because the ageism remains within the group in need of hip replacements, other things being equal, the QALY approach would select the youngest candidates. There is a sense that QALYs themselves are not ageist or sexist or anything but blind, and their outcome takes us back to decisions insensitive to our sympathies for our fellow humans. Whereas Rawls' theory of justice has firmly advanced the difference principle, (if we are to treat people differently, then the least well off must benefit from such treatment), the QALY accounts have retreated even from Bentham's equalitarian concept of justice. As Brock has pointed out in discussing quality adjustments for significant group differences: "...a lower quality is assigned to life years for the elderly, or for seriously disabled or handicapped groups, than to life years for normal adults."[23]

This explanation of the QALY approach and analysis challenges the ethical suitability of QALYs, in both macro and micro health care allocation decisions. This discussion suggests that whatever the mechanism of allocation it must pass the constraints imposed by ethical considerations of social justice. Furthermore, we have come to see that in QALYs health economists have found an efficient way to do the wrong thing.

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Some Ethical Principles for Adult Critical Care

Kenneth Kipnis PhD, Anita Gerhard MD

State of the art in approaching several of the most disturbing problems involving end-of-life decision-making in an intensive care setting is applicable to other contexts as well. Developed as part of the curriculum at the John A. Burns School of Medicine at the University of Hawaii, the material is intended as a reflection of current work in health care ethics, strongly supported by literature, and generally consistent with current legal trends. But it also has developed into something of a consensus document, having been widely circulated in various versions, repeatedly presented to professional audiences dozens of times in Hawaii, and improved by countless comments and suggestions. The focus here is on the standards for withholding and withdrawing treatment. It should be noted that some important types of ethical problems are not covered: In particular, scarce resource problems (including some related questions involving medical futility), maternal-fetal and pediatric issues, and questions involving the notification of potentially affected third parties.

Decisionally Capacitated Patients

For decisionally capacitated patients, it can be axiomatic that health care professionals must secure informed consent prior to treatment. There is almost no debate about this issue. The little discussion is occurring only at the distant margins—refusals by pregnant women and patients with MDR TB. And even in these cases it cannot be said there is a consensus that contradicts the axiom. In essence, where informed consent has been withheld or withdrawn, health care professionals, lacking needed permission, are not at liberty to treat. Refusals of treatment by decisionally capacitated, informed adults are decisive: Relatives and health care professionals have no ethical or legal authority to overturn their medical decisions.

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Competency and Decisional Capacity

All adults are presumed to be competent and decisionally capacitated. This assumption is rebuttable. In this context, the term "incompetency" must be distinguished from "decisional incapacitation," by far the more useful of the two concepts. The former is a legal status that is imposed by courts. A judge, generally following the testimony of a psychiatrist, can find an adult to be legally incompetent and will therefore appoint a guardian who is empowered to make decisions on behalf of the adult, now a ward. Judicial declarations of incompetency are rarely required in the ICU. On the other hand, capacity and incapacity are action-specific concepts that are often clinically applicable. As regards some health-care decision, a patient is sufficiently capacitated to make that particular decision if, at a minimum, he or she has the capacities 1) to understand the problem, 2) to understand the risks and benefits of the available alternatives (including no treatment), and 3) to express a choice. It is possible for a legally incompetent patient—for example, a mature minor—to be decisionally capacitated. Likewise, a competent patient may be decisionally incapacitated, as when a patient is in denial about the medical problem.

Informed Consent

Consistent with this analysis of decisional capacity as a minimum standard, a patient is sufficiently informed to give informed consent if he or she:

1. Understands the medical problem,
2. understands what the health care professional proposes to do,
3. understands the available alternatives, including no treatment, and

4. understands the risks and benefits attaching to each of these alternatives.

What counts as a risk and what counts as a benefit is based on the patient's values. A facial scar can have one assessment to a fashion model and quite another to a Prussian military officer.

Ethically and legally, informed consent is at the heart of the relationship between health care professionals and patients. The question is not whether the heath care professional has accurately set out the facts but, rather, whether the patient has understood. Informed consent is a process of patient education and assessment of the patient's knowledge. The underlying condition is explained the options, and the risks and benefits attaching to each option (including the option of no treatment). Time is allowed for questions and the patient's comprehension is tested, going back over what has not been understood, and then reassessing comprehension. Contrary to the opinion of many, the signature on the form is not the *informed consent* but merely rebuttable evidence that this process has been successfully carried out. In giving informed consent, a patient assumes a measure of responsibility for the decision to implement the medical procedure and gives health care professionals permission to carry it out.

The Patient's Values

Decisional capacity is often said by commentators to require, in addition to 1 to 4 above:

5. some relatively stable set of personal values and
6. the capacity to employ reason in applying these values to situations.

This higher standard is met when the patient can, so to speak, "tell a story" in which the decision, under the circumstances, makes sense against the background of his or her personal values. In assessing decisional capacity it may sometimes be appropriate to explore the patient's values and how these have been applied to the medical alternatives. Where, for example, a patient is rejecting a relatively non-burdensome intervention that promises significant subjective advantages, it is permissible to seek to understand the patient's values, stability, and how these are being applied. A simple and effective way of determining whether conditions 5 and 6 are met is to ask: "Please help me understand why you are making this decision."

In seeking to understand how the patient's decision is supported by the reasoned application of relatively stable values, it is important that health care professionals be able to honor the patient's values, even if these are very different from their own. Caution should be exercised to ensure that the standard of rationality that is applied to the patient is not outcome-based; ie, not set so high that only agreement with the physician's recommendation could count as adequate evidence of decisional capacity.

Determinations of Capacity

Ideally, determinations of decisional capacity (minimum standard) should be made and charted before the patient is asked to express a choice. If, however, there are questions about the reasoned nature of the choice—as when the patient is refusing low-burden, high-benefit treatment—it is recommended to ask the patient to explain why he or she has chosen that alternative: "Please help me understand why you want to do this." But the willingness to respond to such questioning is not a prerequisite for honoring consent in an adult patient. (The ability to respond coherently to such questions, however, might be relevant in rebutting a minor's presumed incapacitation.) Referrals to the hospital ethics committee and/or an ethics consultation (where available) are advised in *enigmatic refusal* cases, where patients are unwilling to reveal their reasons for refusing treatment.

Psychiatric consults are appropriate to determine whether a psychological state, such as the adoption of unusual beliefs or a shift in personal values, is traceable to mental illness. But note that mental illness calls decisional capacity into question only when it directly affects the patient's decision. A diagnosis of mental illness is not the same as a determination of decisional incapacity, for mental illness can preserve capacity in some areas while compromising it in others. Accordingly patients with psychiatric symptoms and/or diagnoses may well be decisionally capacitated. However conditions such as dementia, delirium, depression, mania, and delusions specific to treatment may well call decisional capacitation into question.

Decisionally Incapacitated Patients

Decisionally capacitated patients have the ethical standing to make medical treatment choices on their own. The discussion above sets out what are essentially standard criteria for distinguishing between patients who are decisionally capacitated in this sense and those who aren't. Where patients are found to be decisionally incapacitated, the literature is again fairly consistent in recommending a three-step process. First, determine if there is an advance directive. Second, if unable to obtain an advance directive, endeavor to apply the "substituted judgment test" (See below). And third, in the event that the substituted judgment test cannot be applied, apply the "best interests" test. In all of these cases, the ideal is to approximate, as well as possible, the patient's own autonomous decision.

Advance Directives

Where an adult patient has lost decisional capacity, medical decisions should be made, ideally, in accordance with some previously executed advance directive: A living will or a durable power of attorney. Advance directives are indicated where:

a) incapacitation is anticipated (eg, Alzheimer's disease) and/or

b) conflicts are anticipated with or within the patient's family.

Neither relatives nor health care professionals have the legal or ethical power to countermand the provisions in an advance directive.

Advance directives are fundamentally of two types. There is the "living will" containing instructions for medical treatment in the event the patient becomes incapacitated. The document specifies some set of medically determinable conditions (Two common ones are "in the event that I am terminally ill" and "in the event that I have lost the capacity to participate in medical treatment decisions with no reasonable expectation of regaining that capacity") and a set of instructions to follow when it is determined that the listed condition or conditions obtain. And there is the "durable power of attorney" which delegates the authority to make medical treatment decisions to some third party who is required to act in accordance with the patient's values. (See the discussion below on the "substituted judgment test." Sometimes the two documents are combined, including instructions, as living wills do, but also designating a proxy decision-maker in the event it become unclear how the instruc-

tions are to be interpreted.

Where a physician has personal reservations about carrying out its provisions, the care of the patient should be transferred in a timely way to a physician who can give effect to the patient's decision. Health care professionals should be aware that the provisions of advance directives may vary. These should be studied with care.

The "Substituted Judgment" Test

Where a patient who has lost decisional capacity lacks an advance directive, medical decisions should be made in accordance with the "substituted judgment" test. It is critical, in discussions with the patient's friends and family, to frame the question properly. Those who have been close to the patient should be asked for information about the patient's hopes, beliefs, values, goals, concerns, etc, with the intention of identifying the course of action that the patient would have chosen under the existing circumstances.

It is a good idea to begin a family conference by specifying that the concern is to try to reach agreement about the best decision rather than determine who has the right to decide. If everyone can agree about what is the right thing to do, there is no need to reach the question of who is the one to decide. Note that relatives should not be asked for their decision nor should they be asked about their own preferences. They should instead be asked for specific information that can assist in reaching a shared understanding of how the patient would have made the decision.

The conversation should focus exclusively on what those assembled know about the patient: The stories, the quotes, the insights into the patient's deepest commitments. "Did he or she ever say anything about how these decisions should be made or about how these problems should be approached?" Only after these issues have been amply explored—with everyone having had a chance to contribute and hear what others have to say—it should be asked, "How can we best respect what this person stood for?" Using this approach, medical decisions should reflect the patient's values, as these are discerned by those who have been closest to the patient, those best situated to be able to report reliably on what those values were. On some occasions, but only when this approach has failed, relatives and friends may be polled on the question of which person is the one the patient would have been most likely to entrust with such a decision.

Conversations very like this are also appropriate where there is a proxy decision-maker who has been designated by a durable power of attorney. Though, in these cases, the designated proxy does have a right to decide, he or she is still required to make that decision in the light of the patient's expressed values. Hence the exchange of information can be essential in confirming what those values were.

The Best Interests Test

When a decisionally incapacitated patient has no advance directive and where information is not available about how the patient would have decided — either the patient has never been capacitated or is a "John Doe"—medical decisions should be made using the "best interests" test. For never-capacitated patients, it often makes sense to ask, "What do we know of this patient's sensitivities?" (Warmth, comfort, freedom from pain, etc.) For formerly capacitated patients it can be helpful to ask, "What would the reasonable person in the patient's position choose?" These cases should be referred to the hospital ethics committee.

Contraindicated Treatment

Above All, Do No Harm

The ethical principle, *Above all, do no harm*, prohibits the imposition of burdensome medical treatment that is not expected to provide the patient with any subjective benefit. This principle is most likely to be violated when relatives and other decision-makers are given too free a hand in medical decision-making. Guilt and denial may compel relatives to press for aggressive treatment that the patient is known not to have wanted. Attention to the standards set out in the substitued judgment test can prevent this from occurring.

Medical Futility

There is no ethical obligation to commence or to continue futile treatment modalities, procedures that are not expected to provide the patient with any subjective benefit. Questions of medical futility can arise when patients and families are in agreement that "everything" should be done. In these cases it is critical that patients and families are clear about what outcomes can *and cannot* be expected as a consequence of aggressive treatment. The focus should be shifted away from the treatment modalities that are available to the outcomes that can be reasonably expected to flow from those treatments. (See Competency and Decisional Capacity: Minimum standard for informed consent.)

Most cultures have venerable rituals associated with death: Ceremonies that acknowledge the importance of the person who is dying and that solemnize the seriousness of the occasion. It is unfortunate that health care settings are often prepared to respond to familial apprehension only by imposing medical treatment: A kind of high-tech shamanism. What may be more appropriate to families is intensive spiritual care; a mobilization of social support systems that can assist the family through its loss and transition.

Psychiatric consults may be indicated if, for example, denial or some other delusion specific to a treatment decision is playing a role in the demand for futile treatment. Consultation with an institutional Ethics Committee may also be appropriate in cases where patients and families persist in demanding treatments that do not promise benefits that are subjectively valued by the patient.

Withdrawal and Withholding of Life Support

Where a treatment modality is not owed to the patient (where consent has been withdrawn or where the procedure is not expected, on balance, to provide a benefit to the patient) this treatment modality may be withdrawn or withheld. The same conditions that justify withholding treatment also justify withdrawing it. There is no presumption that, once begun, no matter how futile, life-sustaining medical procedures must be continued. The maintenance of organic life is not, in and of itself, a benefit to the patient. "Benefit" here is to be understood as relative to the patient's values, as discussed in Decisionally Capacitated Patients. Note that the decision to withdraw or withhold life support is not a decision to abandon the patient. Other treatment modalities, especially pain control and comfort care ("aggressive palliative care"), may be required.

Brain Death

Therapeutic treatment modalities are decisively contraindicated for all patients who are dead, including patients who are "brain dead." It is generally unwise to use the expression "brain dead"

with patients' families as the state that is referred to is not one of qualified death. The patient should be described as having died, adding that some of the bodily organs are being supported mechanically in case they may be used for transplants. It is not appropriate to ask relatives for permission to disconnect support equipment in these cases. After death has occurred, that which used to be the body of the patient can be kept on organ support—not life support—until organs usable for transplant purposes are harvested or until it is established that consent to harvest the organs is not available.

The Decision to Withdraw Tube Feeding

Joy F. Murakami MD, Warren F. Wong MD

Physicians involved in the care of elderly patients are often faced with end-of-life decisions including withholding or withdrawal of tube feeding. More than 80% of deaths take place in the hospital or nursing home and the prolongation of life by medical technology has replaced natural processes.[1] We believe the availability of life-sustaining medical technology including tube feeding does not make physicians ethically obligated to use it once it is known that health and function cannot be restored and the burdens outweigh the benefits. Patients and their surrogate decision-makers have a right to refuse life-sustaining medical treatment they find burdensome. Tube feeding as a medical treatment, withholding of tube feeding as equivalent to withdrawal of tube feeding, the benefits versus the burdens of tube feeding, and the decision-making process involved in the withdrawal of medical treatment are considered Hawaii's statutes as they apply to decision-making and examples of cases to illustrate how these concepts are pertinent to patients whom we encounter in clinical practice are discussed.

Tube Feeding as a Medical Treatment

Some individuals view enteral feeding as basic supportive care that is ethically obligatory, and therefore, should not be withheld or withdrawn. The provision of food and water is believed to be symbolic of caring, comfort, and compassion.[3]

However, the majority ethical and legal position at this time is to regard enteral and parental nutrition and hydration as life-sustaining medical treatment with proportionate benefits and burdens that must be assessed individually from the perspective of the patient. As with all other forms of medical treatment, tube feeding can be refused or might not be appropriate. It is the obligation of the physician to obtain informed consent prior to the initiation of tube feeding. Over the last decade there have been numerous court cases supporting the right of the competent individual to refuse life-sustaining tube feeding and have expanded this legal concept to include incompetent individuals and individuals not imminently dying (patients who are in persistent vegetative states or who are very debilitated).[1-3] In 1990, Justice Sandra Day O'Connor, writing in a concurring opinion for the United States Supreme Court in the Cruzan case, stated unequivocally that artificial feeding should be considered a form of medical intervention.[4] Despite emerging legal consensus, in several states feeding tubes are explicitly excluded from the types of life-prolonging treatment that may be rejected in an advance directive such as a living will. Since July of 1991, Hawaii's statute has explicitly addressed whether the declarant wants or does not want tube feeding. Patients should, therefore, have an updated declaration.

Tube feeding is a medical treatment, but we contend that all health care treatments, whether regarded as basic supportive care or medical intervention, are subject to a benefit/burden analysis and can be accepted or rejected by an adequately informed patient or surrogate decision-maker.

Withholding Versus Withdrawal of Tube Feeding

Decisions concerning initiation, withholding and withdrawal of life-sustaining enteral nutrition are very difficult to make. There is not always a clear sense of whether to start tube feedings. When the prognosis is not clear and there is evidence to suggest that nutritional support can help a person regain health and function or allow time to recover, the more prudent decision is to initiate a time-limited trial of tube feeding. Tube feeding can be withdrawn when it becomes clear that therapy is not effective, or that the burdens of prolonging life with tube feeding outweigh the benefits,[5] or when the patient's prognosis or wishes have been clarified.

Ethicists and the courts equate the act of withdrawing a treatment with the act of withholding a treatment once the appropriate individuals have reached a decision. If withdrawing a treatment is considered more problematic than withholding one, physicians will withhold treatments when they are uncertain as to their benefit, rather than risk not being able to withdraw the treatment later.[4] This denies many patients potentially beneficial treatments.

Many health care providers believe it is psychologically and emotionally more difficult to withdraw treatment rather than

withholding treatment, and this may be more true with tube feeding than with other life-sustaining treatments. However, for the reasons outlined above, we support the view that there is no significant ethical difference between withholding and withdrawing tube feeding if the essential considerations regarding medical indications and goals, patient preferences, and benefits and burdens are the same.[2]

Benefits Versus Burdens of Tube Feeding

The benefit of enteral feeding is the improvement of the nutritional status of individuals who are unable to tolerate feeding by mouth. Tube feeding may decrease the risk of infection, pressure ulcers, and aspiration pneumonia. The burdens of tube feeding include discomfort from the tube and the need for restraints to prevent dislodging of the tube. The probability of aspiration pneumonia may actually increase for some patients following the initiation of tube feeding. Patients undergoing gastrostomy are at risk of infection, painful insertion sites, wound dehiscence, hemorrhage, prolonged ileus, pyloric obstruction and gastric prolapse. Those undergoing jejunostomy incur the dangers of anesthesia and the risk of diarrhea and associated dehydration. Hospitalization is required for both gastrostomy and jejunostomy and may be a stressful experience for cognitively impaired elderly patients.[6-7] These are the quantitative benefits and burdens. The qualitative benefits and burdens are just as important, if not more so.

Some individuals believe in the sanctity of life itself, and to these individuals the prolongation of life under any circumstances is a benefit. Proponents of sanctity of life may insist that diminished quality of life never justifies the removal of life-sustaining treatment. Most people, however, believe that prolongation of a life of minimal quality is a burden and not a benefit.

The evaluation of quality of life of an individual lacking decision-making capacity must be based on that individual's prior preferences, values and goals of life. The objective evaluation of quality of life, however, may be difficult in that the personal beliefs and values of the surrogate decision maker may interfere. Jonsen et al[2] suggest that broad, if not universal, agreement would be possible on the following descriptions:

a. *Restricted quality of life* is an appropriate description of a situation in which a person suffers from severe deficits of physical or mental health. It is a judgment that might be made by the one who lives the life or by others who observe that person.

b. *Minimal quality of life* is an appropriate description for the situation in which an observer (such as the physician or family member) views a patient whose general physical condition has deteriorated beyond recovery, whose ability to communicate with others is severely restricted, and who appears to suffer discomfort and pain.

c. *Quality of life below minimal* is an appropriate description of the situation in which the patient suffers extreme physical debilitation and complete and irreversible loss of sensory and intellectual activity. It might even be suggested that this state would be better described as having no quality, since the ability for subjective evaluation has presumably been lost by the person in such a condition. This description applies to persons in a persistent vegetative state.

Most of the available literature and key landmark court cases support the withdrawal of tube feedings in patients with persistent vegetative state or permanent unconsciousness.[1-3] These cases do not reflect the majority of situations that clinicians face in their daily practices. Elderly individuals with severe irreversible neurological damage such as those with severe dementia and stroke are much more common.[8] These are the kinds of patients with a quality of life considered minimal by the description suggested above. Advance directives are valuable in situations such as these because they select out those patients who consider such a life burdensome and would not choose to be in such a condition.[9-11]

Many patients also consider the burden they will impose on their caregivers. Although some ethicists think this consideration is not appropriate, other individuals believe any burdens a patient wishes to consider are appropriate, and the concerns elderly patients have for their family members should not be minimized by physicians.[4] Tube feeding may necessitate institutional placement. To some individuals life in a long-term-care facility may represent a burden.

Prolongation of life with tube feeding also poses a burden to society. While the cost of medical services and the allocation of resources must never be allowed to intrude into medical decision-making for an individual patient, the cost to society in general is very real. As of 1988, there were an estimated 280,000 Americans in long-term care institutions on tube feeding.[7] In 1989, the number of persons who were 65 years and older was 31 million, or 12.5% of the population. In 2030, there will be 65.5 million elderly persons in the United States, or 22% of the population.[12] Dementia is the most prevalent diagnosis in long-term care facilities. There is already a shortage of beds and personnel needed to care for patients requiring long-term care. Chronic tube feeding in patients with severe dementia and other forms of severe irreversible neurological damage increases the need for skilled nursing services for this population of patients. If public policy does not support the withholding and withdrawal of life-prolonging tube feedings as requested by informed surrogate decision-makers, then the public needs to plan to provide and pay for the additional services that will be required.[7] It is interesting to note that many British physicians do not use feeding tubes on long-term care wards and are reluctant to insert them in patients who are unable to give consent to placement.[13]

The Decision-Making Process

Both legal and ethical consensus support that an adult patient who has decision-making capacity and is appropriately informed has the right to refuse all forms of medical treatment including life-sustaining treatment. An adult patient who no longer has decision-making capacity should continue to have the right to refuse all forms of medical therapy. In order of priority, decisions should be based on advance directives, substituted judgments, and the best interests of the patient.[14-15]

Decision-making capacity refers to a patient's ability to make an informed decision as assessed by health care professionals. Persons whose cognitive ability is not normal should not be disqualified as decision-makers. For example a patient may not be fully oriented to time and place, but still understands the medical issues before him or her. The central test of competence is the evidence that a person understands the nature of the issue and the consequence of the choice he or she is making. It is also helpful to place any choice in the context of a person's own life history and values and ask whether the particular choice is

consistent with these. This is sometimes called the "authenticity" of the choice.[2] A third element of decision-making capacity is the ability to communicate meaningfully.[15] We also find consistent responses over time to be helpful in determining decision-making capacity. A patient may have decision-making capacity for certain issues and not for others. Decision-making capacity should be assessed in relation to the decision at hand.

Advance treatment directives are useful in patients who no longer have decision-making capacity: Natural Death Acts, durable powers of attorney for health care, and living wills.[2] Natural Death Acts are statutes passed by state legislatures affirming a person's right to make decisions regarding terminal care and provide direction about how that right can be effected after the loss of decision-making capacity. They typically contain a model (sometimes mandatory) document.

Durable powers of attorney for health care or health care surrogate is also a statute passed by a state legislature. It authorizes an individual to appoint another person who is familiar with his or her preferences and values to act as the agent to make health care decisions after he or she becomes incapacitated.

Living wills are advance directives communicated by a person to physicians, family and friends in a less formal, less legalistic fashion. Prepared living wills are available, or patients can choose to compose their own form of the living will. In some states, these personal documents are given legal standing. Even if there is no explicit legal recognition of personal documents, physicians can act on them as expressions of their patient's preferences.

Hawaii's statute, "Medical Treatment Decisions" (Chapter 327-D), appears to be a form of a Natural Death Act and seems to imply legal recognition of living wills, either *written or documented verbal statements to a physician*. We believe that a couple of points need to be made regarding Hawaii's Medical Treatment Decisions statute. First, after careful reading, the definition of terminal illness is nonsensical. *Terminal illness* is defined as "any incurable or irreversible disease, injury, or condition which ...will... serve to delay the moment of death of a patient." Second, Hawaii's statute applies to non-terminally ill as well as terminally ill patients. The sample declaration states, "If I should develop a terminal condition or a permanent loss of the ability to communicate...I do not want to have my life prolonged." The definition of permanent loss of ability to communicate includes not only patients who are permanently unconscious, but patients with severe neurological or brain damage, with no reasonable expectation of regaining this capacity. Withholding or withdrawing tube feedings in these cases is sometimes contested by families or professionals. There have been situations in which patient surrogates have contested that patients never fully understood the implications of the declaration. For these reasons, physicians and patients need to document clearly that this is the actual intent of an executed declaration.

Hawaii also has a Uniform Durable Power of Attorney Act (Chapter 551D) which defines durable power of attorney for health care decisions. The attorney-in-fact is able to make decisions about life-prolonging procedures for patients who develop a terminal condition or a permanent loss of the ability to communicate concerning medical treatment decisions with no reasonable chance of regaining the ability. This statute states that the durable power of attorney for health care does not grant the authority to withhold or withdraw life prolonging treatment unless explicitly stated. This statute is restrictive, and it is proposed that a statute that explicitly grants an attorney in fact authority to make all health care decisions would be more useful.

In the absence of advance directives, the right to refuse medical therapy is exercised on the patient's behalf by an appropriate surrogate decision-maker. Physicians have traditionally turned to the patient's family for consent to provide or terminate treatment, but the legal status of the family to give consent is not always clear. Surrogate decision-making by family members is authorized by statute or case law in approximately half the states. In Hawaii, such a statute has been proposed but has not yet been legislated. In the absence of a family consent statute, a physician justifiably might be uneasy about relying on the authority of the family when making treatment decisions. However, most courts have declined to require judicial intervention as a prerequisite to withdrawal of life-sustaining treatment from an incompetent adult.[16]

With the assistance and advice of a physician, the surrogate decision-maker is asked to make a decision on behalf of the patient, judging as best as he or she can what the patient would have wanted. This judgment is based on the patient's previously stated preferences, values and goals in life. This process is known as substituted judgment.[4,14]

When no information about the patient's prior wishes, values and goals of life are available, the surrogate decision-maker must decide on the basis of what he or she believes is in the best interests of the patient. Determining the best interest of the patient is based on weighing the benefits for the patient of starting or continuing a certain life-sustaining therapy against its burdens on the patient. When there are conflicts, hospital ethics committees can provide assistance. The courts usually are not involved unless there are conflicts that otherwise cannot be resolved.[14]

Cases

The following cases represent hypothetical patients based on true clinical experiences. These cases illustrate and expand on some of the points presented.

Case 1

Mrs A was treated with gastrostomy tube-feeding following a right intracerebral hemorrhage manifested by left hemiparesis, dysphasia and dysphagia. She was incontinent of bowel and bladder, nonambulatory, and required assistance for transfers and all activities of daily living. She had been residing in a skilled nursing facility for two years when she began to point to the tube feeding bottle, then to herself, and then straight upward. She did this repeatedly over a period of time. This was interpreted by her husband as a request to discontinue tube feeding and allow her to "go to heaven." She was evaluated by her physician who witnessed these gestures. A nurse indicated that Mrs A was able to consistently answer yes-no questions by using head shakes and hand squeezes. It was agreed that she understood that death would ensue if tube feeding were withdrawn. Furthermore, Mrs A had a living will indicating that she would not want tube feeding in the event that she had a terminal illness or permanent inability to communicate.

This case illustrates that a person whose communication and cognition are not normal should not be disqualified as a decision-maker. It also shows that communication needs to be

facilitated if necessary. If Mrs A is judged to have the capacity to make an informed decision by health care professionals involved in her care, then she has the right to refuse all forms of medical treatment including life-sustaining tube feeding. The right to refusal applies equally to withholding and withdrawing treatment, and this right is based on the ethical principal of autonomy and the common law right of self-determination. Goldstein and Fuller[4] propose the following guidelines in interpreting nonverbal behavior: 1) Look for consistent responses over time; 2) attempt to verify your interpretation of the behavior with people who know the patient well; and 3) analyze your own reactions to the behavior, and attempt to minimize the projection of your own wishes to the patient. The advance directive, although not applicable at this time, shows that beliefs are consistent over time.

Case 2

Mr B underwent excision of a meningioma. Following surgery he remained lethargic and confused. Verbalizations were sparse and unintelligible. Mr B had a living will that indicated he did not want his life prolonged by tube feeding if he had a terminal condition or permanent loss of ability to communicate concerning medical treatment decisions. He also had a durable power of attorney for health care. He had clearly stated to this individual that he did not want to be "put out to pasture" in a nursing home and that he did not want to be maintained on tube feedings as his wife had been. Following a discussion, the patient's family, including his attorney-in-fact, elected to observe how Mr B would recover from his surgery over the ensuing months and gastrostomy tube feedings were initiated. Mr B failed to improve and he was transferred to a skilled nursing facility. Neurology and neurosurgical reevaluations were requested. A CT scan did not show hydrocephalus and EEG did not demonstrate any seizure activity; there was bilateral slowing. Tagamet and Dilantin were discontinued. Mr B became slightly more arousable but all verbalizations remained unintelligible. Mr B's attorney-in-fact asked that tube feeding be discontinued.

This case demonstrates the use of a time-limited trial of tube feeding may be preferable to withholding treatment when prognosis is not clear. Tube feeding can be withdrawn when the prognosis for recovery is clarified. It also illustrates the need to optimize the patient's medical condition when assessing decision-making capacity, ie, hydrocephalus and seizure activity were ruled out and medications were adjusted. The most important point illustrated by this case is the significance of advance directives in facilitating and guiding medical decision-making involving an incapacitated patient. This patient had a written declaration and a durable power of attorney for health care and had made clear verbal statements regarding his wishes.

Case 3

Mr C, a 60-year-old, had a cardiac arrest. Cardiopulmonary resuscitation was initiated immediately and continued for more than 2 hours. At the time resuscitation efforts were discontinued, Mr C had a spontaneous pulse. He was unresponsive and was believed to have hypoxic encephalopathy. Tube feedings were initiated shortly after his admission to the hospital. An EEG done initially and repeated 1 month later demonstrated no clear cortical activity. Based on clinical findings, a diagnosis of persistent vegetative state was made. There was no recovery over the next 3 months and Mr C's wife and children asked that tube feeding be discontinued.

This case serves as a point of discussion about withdrawal of tube feeding in patients in persistent vegetative state (PVS). The American Medical Association's council report on "Persistent Vegetative State and the Decision to Withdraw or Withhold Life Support" provides a definition, clinical criteria, and differential diagnosis of PVS.[17] This report also offers guidelines in determining prognosis in patients in PVS. For example, of prognostic relevance in this case is that few if any patients who remain vegetative following cardiac arrest recover after 1 month and essentially none will regain cognition after 3 months. Furthermore, prognosis for cognitive return is poor in patients over 40 years old when compared to those younger than 40.

There is an emerging ethical and legal consensus supporting the withdrawal of life-sustaining treatment including tube feeding in patients in PVS. It is the opinion of Jonsen et al[2] that physicians are acting within the law, as currently understood, when they decide to withhold or withdraw life-supporting interventions, unless there is specific law to the contrary in any particular jurisdiction. The conditions required for this decision are: 1) It is virtually certain that further medical intervention will not attain any of the goals of medicine other than sustaining organic life; 2) the preferences of the patient are not known to be contrary and cannot be expressed; 3) quality of life clearly falls below minimal; and 4) family and members of the staff are in accord. They suggest institutions should request their legal counsels to prepare clear instructions for the medical staff in view of prevailing local law. Other than advance directives, Hawaii does not have statutes that specifically address the withdrawal of life-sustaining treatments in a patient in PVS. The AMA's council report similarly indicates that once a diagnosis of permanent unconsciousness has been made, decisions to withhold or withdraw life-prolonging medical treatment ordinarily can be implemented without resorting to the courts. Although judicial intervention has been sought for a variety of reasons by a variety of parties, it is appropriate only when there is a dispute among family members or other guardians about the patient's wishes or interest or among the physicians regarding the diagnosis.

Case 4

Mrs D is 85 years old and resides in a nursing facility. She has had a diagnosis of Alzheimer's disease for 8 years. At this time, dementia is severe. Speech is limited to a few words. She no longer is able to walk, is confined to a bed or chair, and is dependent in all activities of daily living. Mrs D does not recognize or interact in any meaningful way with family members or nursing staff. Supplemental tube feedings were initiated at an earlier stage of her disease. She is not able to swallow and requires total enteral nutrition. Based on what Mrs D had valued in life, her husband and children indicate that she would not want to live in this manner. They request that tube feedings be discontinued. Mrs D does not have advance directives.

Case 5

Mr E is a 78-year old who was admitted to the hospital with an

extensive left middle cerebral artery stroke with right hemiplegia and global aphasia. Tube feeding was initiated shortly after admission. Stroke rehabilitation was initiated but Mr E failed to make any gains in physical, occupational or speech therapy because of lethargy. Over the next several months, there was no improvement in neurological function. He remained dependent in mobility and activities of daily living, incontinent of bowel and bladder. He also continued to be lethargic and aphasic. There was no evidence of a reversible cause of his altered mental status. Mr E's daughter stated that her father would not want to live this way based on his previously stated preferences and beliefs and his joys in life. She requested that tube feeding be discontinued. There were no written or documented verbal advanced directives.

Although a degenerative disease such as Alzheimer's disease or stroke can result in PVS, Mrs D and Mr E are clearly not in PVS. These cases reflect the types of situations that clinicians face in their practices. Based on the preferences, beliefs, values, and goals of life of these patients, their surrogate decision-makers claim they would regard their current quality of life as minimal and burdensome. Cases 4 and 5 are offered to illustrate the need for a clear family consent statute.

Summary

The majority ethical and legal position at this time is to regard tube feeding as medical treatment and the act of withholding and withdrawal of treatment as equivalent. An informed adult patient with decision-making capacity has the right to refuse all medical treatment including life-sustaining treatment and this right is based on the principles of autonomy and self-determination. Advance directives extend this autonomy and significantly facilitate and guide end-of-life decisions of incapacitated patients. Only 8% to 15% of Americans have written advance directives.[18] We believe physicians need to be knowledgeable about the local statutes pertaining to medical treatment decisions and that it is their responsibility to assure their patients have explicit advance directives in the form of written declarations and/or documentation of clearly expressed verbal statements. In the absence of advance directives, an informed surrogate decision-maker should have the right to refuse medical treatment on the patient's behalf and statutes are needed to clarify the role of surrogate decision-makers. Finally, discussions of the ethical and legal issues regarding the withdrawal of tube feeding in patients with severe irreversible neurological impairment with minimal quality of life are needed.

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Legal Liability Under Managed Care

Kenneth S. Robbins Esq.

Market forces are driving the delivery of health care into managed care. New alignments among health care providers, payers, utilization reviewers and hospitals create new legal liability. Better-informed patients, concurrent credentialing by hospitals and payers, and new incentives to reduce hospital and physician-related costs have resulted in new federal legislation and agencies that reshape health care delivery and legal liability.

Introduction

Managed care is coming to Hawaii. Indeed, it is in place to a great extent in many areas of this country. The politicos in Washington may differ noisily as to how delivery of health care should be retooled, but the inexorable forces of the marketplace are moving the delivery of health care into managed care. Some insurers and physician groups are purchasing hospitals. Some hospitals are dispensing with *independent medical staffs* and are employing physicians directly. Like it or not, we must anticipate what managed care will bring. Part of what managed care will bring are new alignments among insurers, hospitals, and physicians, and with those realignments both major and subtle changes in legal liability within a managed care system will be seen.

A review of the forces driving us toward managed care yields insight into what those legal liability changes probably will be. Using a medical analogy, if we evaluate what the disease within the system is, we can anticipate the attempted cure and the side effects of the cure.

Economic Forces Driving Toward Managed Care

In 1994 the United States acknowledged its participation in a global economy. NAFTA and GATT thrust us anew into the global marketplace. Current discussions and negotiations with Pacific Rim countries will undoubtedly yield even more formal agreements between the United States and its Pacific Rim trading partners. Increased participation in the global economy means, among other things, that anything spent on goods and services that cannot be exported and sold abroad will make us less competitive in the international marketplace. Unquestionably, exploitation of medical technology and know-how is, and should be, a significant component of our trade overseas, but expenditures for health care within our country are a resource not favorably affecting the balance of trade. Unnecessary expenditures within a wasteful health care delivery system renders us less competitive in the global marketplace.

Health Care Finance and Review demonstrates vividly the increasing percentage of gross national product consumed by U.S. national health expenditures (Fig 1). Under the current system, a full 32% of gross national product will be consumed by health expenditures by 2030. A jump from 5.3% of GNP in 1960 to 32% in 2030 would destroy any attempt for this country to compete internationally.

In 1990, health care expenditures in the United States were almost twice that of our primary Pacific economic competitor, Japan, and almost four times that of China (Fig 2, 3). The remarkable statistic of 1.9% for Singapore is probably the result, in large part, of a system called Medisave. In Singapore, whatever portion of an annual health care expenditure allotment an individual does not spend is deposited into a pension plan for that individual. This system of incentives to save money can be argued to support a system under managed care into which incentives can be built. Such incentives will undoubtedly yield interesting twists in the area of health care practitioner legal liability.

A given then is the percentage of gross national product spent in this country on health care as one of the significant factors that reduces our global economic competitiveness.

The *disease* is a costly health care system. A look at the most expensive components of the system points out what the attempted *cure* will include (Fig 4). Of particular interest is the fact that hospital care constitutes 38 cents of each health care dollar spent in 1990. Physician services are the next largest single cause of health care expenditures. Therefore, it is not unreasonable to project that a managed care system will ultimately be in place that will 1) be incentivized to reduce total health care expenditures; 2) target, in particular, the cost of hospital care; and 3) will be designed to reduce the cost of physician services.

Fig 1.—U.S. National Health Expenditures 1980 to 2030

YEAR	GROSS DOMESTIC PRODUCT (Billions)	NATIONAL HEALTH EXPENDITURES (Billions)	PERCENT OF GDP
1980	$2,708	$250.1	9.2
1990	$5,514	$666.2	12.1
1991	$5,674	$736.5	13.0
1992	$5,909	$819.9	13.9
1993	$6,259	$903.3	14.4
1995	$7,069	$1,101.9	15.6
2000	$9,637	$1,739.8	18.1
2010	$17,238	$3,787.8	22.0
2020	$29,594	$7,839.4	26.5
2030	$49,936	$15,969.6	32.0

NOTE: 1992-2030 Projected.
SOURCE: Health Care Financing Review, Fall 1992, Vol. 14, No. 1.

Fig 2.—National Health Expenditures as a Percent of GDP, Selected OECD Countries, 1970 to 1990

Country	PERCENT OF GDP					
	1970	1975	1980	1985	1989	1990
Canada	7.1	7.2	7.4	8.5	8.8	9.3
France	5.8	7.0	7.6	8.5	8.7	8.8
Germany	5.9	8.2	8.4	8.7	8.2	8.1
Italy	5.2	6.1	6.9	7.0	7.6	7.7
Japan	4.4	5.5	6.4	6.5	6.6	6.5
United Kingdom	4.5	5.5	5.8	6.0	6.1	6.2
United States	7.4	8.4	9.2	10.5	11.5	12.1

SOURCE: Schieber and Poullier (1991); Scheiber, Poullier, and Greenwald (1992).

Fig 3.—National Health Expenditures as Percentage of GDP 1990, Selected Asian Countries

COUNTRY	% of GDP
India	6.0
China	3.5
Indonesia	3.7
Japan	6.5
Pakistan	3.4
Philippines	2.0
Thailand	5.0
South Korea	6.6
Sri Lanka	3.7
Hong Kong	5.7
Singapore	1.9
Malaysia	3.0
Papua New Guinea	4.4

SOURCE: World Bank.

What is Managed Care?

Managed care within the context of the delivery of health care services is a carefully planned system within which the following are important components:

1. An agreement by a hospital or related organization to provide certain health care services;
2. Those certain health care services are subject to a system designed to assure proper utilization and quality of care;
3. In exchange for a payment by a third-party payer.

This management of care may be imposed solely by the payer, by hospitals, or medical service organizations in concert with payers, physicians, and hospitals. There are almost countless potential configurations of interrelationships among components of managed care systems. There is no indication which configuration of the many possibilities will be implemented eventually in Hawaii. Currently physicians, medical center and clinic CEOs, and attorneys are attending many seminars and programs being offered with a view toward deciding on and implementing managed care systems in Hawaii.

With the foregoing components of managed care in mind and reflecting on the economic forces driving us toward managed care, it can be predicted with probability that managed care in Hawaii will utilize a variety of devices to eliminate or minimize to every extent possible the economic uncertainties of the present health care delivery system. Under the present system, a third-party payer, such as HMSA, will reimburse a fixed percentage of approved services. Although reimbursement is for approved services only and at a fixed percentage, there is enormous financial uncertainty within the current system. The current system is tantamount to a system of property insurance in which an insurer agrees to reimburse a homeowner 80% of whatever the replacement cost may be of a home destroyed by fire. To be sure, a replacement home under those circumstances will be considerably grander and more expensive than if the home were replaced under a system in which the insurer imposed a fixed limitation on the cost of a replacement home.

A concept of *capitation* will incorporate into managed care the fixed limitation on the amount available for health care for each patient/participant in the program. As an example, if the system allocates for each patient/member of a particular managed care program a total of $5,000 a year for total health care costs, including hospitalization, physician charges, drugs, etc, the managed care system will make money if less than $5,000 per patient is spent. Money will be lost if more than $5,000 is spent per year per member for health care expenditures. A similar system is already in place in Hawaii and throughout the Mainland in the form of health maintenance organizations (HMOs).

Major and Subtle Changes of Legal Liability of Managed Care

A look at the economic forces driving us toward managed care, and the realignment of hospitals, physicians, and insurers within a system of capitation, suggest what the legal liability issues will be in a managed care system.

Independent medical staff will lose its meaning in a system in which physicians own a hospital or in which a hospital employs physicians. Hospital administration will not have available to it the defense that it exercises no control over a physician's independent practice of medicine within its physical facilities. The hospital will have total vicarious liability for the acts and omissions of the physicians whom it employs. Therefore, a hospital-employed physician will no longer have the incentive to point the finger of liability at hospital employees and, conversely, the hospital will not have the incentive to point the finger of liability at the physician, who is no longer a member of an independent medical staff. Indeed, the same attorney may represent both the hospital and the physician when both are sued by a patient. Under the present system, a patient may sue a hospital and also name as a defendant nurses employed by the hospital. Just as there is usually no conflict of interest for one attorney to represent both the hospital and the nurses in that

Fig 4.—The Nation's Health Dollar: 1990

PAYMENT SOURCE (Cents)	
Private Health Insurance	33
Medicare	17
Medicaid	11
Other Government	14
Other Private	5
Direct Patient Payments	20
EXPENDITURE (Cents)	
Hospital Care	38
Physician Services	19
Nursing Home	8
Other Personal Health Care	23
Other Spending	12

NOTES: Other private includes industrial, non-patient revenue, private construction. Other personal care includes dental, drug, other goods and services. Other spending includes, administrative, research and construction.
SOURCE: Health Care Financing Administration

setting, there would be no conflict of interest for the same attorney to represent a hospital and a physician who is employed by that hospital. Therefore, terms such as "independent contractor," "ostensible agency" and "independent medical staff" may no longer be relevant in the medical malpractice setting.

The reversal of incentive to treat a patient creates other legal liability issues. There will be incentives for hospitals to maintain the lowest possible census to reduce hospital expenditures within a system of capitation. Similarly, there will be incentives for physicians to see patients as infrequently as the standard of care will allow. Consequently, Medicare fraud and abuse concerns may focus on a provider's failure to deliver sufficient services rather than a delivery of unnecessary services in exchange for payment.

Managed care contracting among groups of physicians, hospitals, and insurers can and will raise antitrust issues as providers and payers enter into exclusive arrangements. Therefore, it is imperative that exclusive arrangements among health care providers, hospitals, and insurers be drafted carefully to avoid antitrust issues.

Various payment mechanisms can raise issues of fee-splitting which, again, should be addressed carefully in the formulation of managed care agreements.

The provision of certain health care services, subject to a system designed to assure proper utilization and quality of care, can and probably will raise legal issues with respect to a payer's utilization review decision, which may limit access to care. Cases on the Mainland have already been the subject of considerable publicity in which bone marrow transplants, for example, have been denied reimbursement by third-party payers. Accordingly, patients will sue payers and providers independently and in parallel claims for provider's alleged negligent care and payer's imposing unreasonable limitations on the delivery of care because of this utilization review decision. This will create even greater polarity between payers and providers resulting in finger-pointing between payers and providers if a patient alleges failure to provide sufficient services.

Concurrent credentialing by hospitals and payers or their affiliated utilization review organization will cause a retooling of peer review confidentiality and protection. Traditionally, hospitals are concerned with the competence of a physician. Under the present system a hospital's credentials committee will rarely concern itself with a physician's utilization track record. Again, what with an attempt to reduce hospital census and reduce the frequency of physician visits under a capitation system, credentialing will be based on both the physician's competence *and* utilization track record. A hospital may conclude that a physician is competent, while the payer component of the managed care system may wish to exclude the entry of a physician into the system because of a track record of over-utilization.

The credentialing process will, therefore, incorporate into it a much greater emphasis on a physician's morbidity and mortality track record. Not only will morbidity and mortality statistics become an integral part of credentialing decisions, but such statistics will become available to patients in formulating an informed decision in selecting physicians.

Because hospitals and payers will each conduct their own credentialing process, peer review protection will either have to be broadened to include credentialing by payers or may be reduced or eliminated altogether as morbidity and mortality statistics are considered important information to be made available to patients in making health care decisions.

Agency for Health Care Policy and Research Section 6103 of OBRA 1989

The major functions of the Agency for Health Care Policy and Research section 6103 of OBRA 1989 creates a new Title IX of the Public Health Service Act:[1]

1. To conduct and support research, demonstration projects, evaluations, training, guideline development and the dissemination of information on health care services and systems for the delivery of such services including activities with respect to: a) the effectiveness, efficiency and quality of health care services and procedures; b) the outcomes of health care services and procedures; c) clinical practice, including primary care and practice-oriented research; d) health care technologies, facilities, and equipment; e) health care costs, productivity and market forces; f) health promotion and disease prevention; g) health statistics and epidemiology; and h) medical liability. This legislation also will assess health technology and establish an advisory council for health care policy, research, and evaluation.

What will probably be the most controversial and discussed component of this new legislation is the establishment of the Office of the Forum for Health Quality and Effectiveness. This office will arrange for the development, periodic review and updating of clinically relevant guidelines that may be used by physicians, educators and health care practitioners to assist in determining how diseases, disorders and other health conditions most effectively and appropriately can be prevented, diagnosed, treated and managed clinically.

Further, the Office of the Forum for Quality and Effectiveness will develop, review periodically, and update standards of quality, performance measures and medical review criteria through which health care providers and other appropriate

entities may assess and review the provision of health care and assure the quality of such care. Such guidelines, standards, performance measures and review criteria are to be based on the "best available research and professional judgment" and are to be presented in formats appropriate for use by physicians, health care practitioners, providers, medical educators, and medical review organizations, and in formats appropriate *for use by consumers of health care.* This will include treatment-specific or condition-specific practice guidelines for clinical treatments and conditions, and forms appropriate for use in clinical practice, educational programs, and in reviewing quality and appropriateness of the medical care.

Priorities in establishing such practice guidelines, standards, performance measures and review criteria will be prioritized based on needs of Medicare, particularly high-cost or controversial items and items with substantial variation nationally. Among those areas of clinical practice selected for application of the guidelines, standards, performance measures, and review criteria are:

- Post-operative pain management
- Urinary incontinence in adults
- Prediction and prevention of bedsores
- Benign prostatic hypoplasia
- Low-back pain problems
- Depression treated by primary care physicians in an out-patient setting
- Evaluation and management of early HIV infection
- Management of cancer-related pain
- Treatment of pressure ulcers in adults
- Quality determinants of mammography
- Otitis media with effusion in children
- Heart failure: evaluation and care of patients with left ventricular systolic dysfunction
- Post-stroke rehabilitation
- Screening for Alzheimer's disease and related dementia
- Cardiac rehabilitation
- Diagnosis and management of unstable angina
- Smoking prevention and cessation
- Diagnosis and treatment of anxiety and panic disorder in a primary care setting

Definitions within this new legislation are as follows:

- Practice guidelines: Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.
- Medical review criteria: Systematically developed statements that can be used to assess the appropriateness of specific health care decisions, services and outcomes.
- Standards of quality: Authoritative statements of 1) minimum levels of acceptable performance or results, 2) excellent levels of performance or results, or 3) the range of acceptance performance or results.
- Performance measures: Methods or instruments to estimate or monitor the extent to which the actions of a health care practitioner or provider conform to practice guidelines, medical review criteria, or standards of quality.

"Cookbook" Medicine from a Legal Liability Viewpoint

There are seemingly insurmountable obstacles in developing practice guidelines in some areas, such as treating back pain. Once the obstacles are overcome and practice guidelines are developed and put in place, the question arises as to whether deviation from the guidelines can be used by a patient in a lawsuit against a physician. Physicians argue that the establishment of practice guidelines that cannot possibly apply in every instance to every patient will now provide patients and their attorneys with even more ammunition in medical malpractice lawsuits.

Once practice guidelines are enacted, won't this give patients and their attorneys new ammunition to use in lawsuits against physicians? Maine and other states have confronted this potential problem by decreeing by statute that only the defendant physician may refer to practice guidelines in his or her defense. In other words, practice guidelines cannot be raised initially by the patient's attorney to prove a deviation from the guideline and, thus, care and treatment below the standard of care. Initially, only the physician's attorney can utilize as evidence a practice guideline to show conformance with the guideline as a defense for a medical malpractice lawsuit. Therefore, in Maine and the other states, a practice guideline in a medical malpractice lawsuit is not a spear, it is a shield.

Whatever the legal liability implications may be of practice guidelines or practice parameters, the demonstration project in Maine appears to have some profound impact on the practice of medicine. A *Wall Street Journal*[2] article said that 80% of practicing physicians in Maine are participating in the demonstration project, it is reported that prior to the imposition of practice parameters, 95% of all victims of falls and car accidents were ordered to have $170 neck x-rays at the emergency room of Maine Medical Center. Following the imposition of the practice parameters, that percentage was reduced to 50%. It is also reported that anesthesiologists are now doing fewer blood tests

Fig 5.—Sample Protocol in Maine Medical Liability Demonstration Project Excerpts

MEDICAL LIABILITY DEMONSTRATION PROJECT
OBSTETRICS AND GYNECOLOGY PRACTICE PARAMETERS

CONTENTS:

I. Procedure: Cesarean Delivery for Failure to Progress
II. Procedure: Assessment of Fetal Maturity prior to repeat Cesarean delivery or elective induction of labor
III. Procedure: Hysterectomy, abdominal (68.4) or vaginal (68.5)
IV. Procedure: Hysterectomy, abdominal (68.4) or vaginal (68.5)
V. Procedure: Tocolysis
VI. Condition: Presumed Ectopic Pregnancy in a clinically stable patient
VII. Condition: Singleton Breech Presentation
VIII. Condition: Perinatal Herpes Simplex Virus Infections
IX. Condition: Intrapartum Fetal Distress
X. Topic: Antepartum Management of Prolonged Pregnancy

IV. PROCEDURE: HYSTERECTOMY, ABDOMINAL (68.4) OR VAGINAL (68.5)

A. Indication: Abnormal uterine bleeding in women of reproductive age (626 all, except 626.0, 626.1, 626.3, 626.7)*

Confirmation of indication:

1. History of all of the following:
 a. Excessive uterine bleeding or irregular uterine bleeding defined as bleeding for more than 8 days during more than a single cycle and profuse bleeding requiring additional protection;**
 b. No history of a bleeding diathesis or use of medication that may cause bleeding;
 c. Negative effect on patient's quality of life.
2. Failure to find on physical examination, uterine or cervical pathology that would cause abnormal bleeding.
3. Laboratory data:
 a. No finding of endometrial neoplasia;
 b. No malignancy found in cytological studies of cervix.
4. No finding of endometrial polyps by D&C, hysteroscopy, or hysterogram.

B. Actions Prior to Procedure:

1. Determine that attempted hormone treatment (estrogen-progestogen) was not successful or contraindicated or refused.
2. Hemoglobin or hematocrit documented.
3. Document and attempt to correct anemia if present.
4. Offer autologous blood donation if appropriate.
5. Document patient education and informed consent.

C. Contraindication:

1. Desire to maintain fertility.

Reference: Quality Assurance in Obstetrics & Gynecology, 1989 ed.

* Other diagnoses that should also be evaluated according to these criteria include menorrhagia (626.2, 627.01, hypermenorrhea (626.2).

** For example, large clots, gushes, irritations on activity.

[Me Rev Stat Ann X 24, Section 2971 (West Supp 1991)]

and chest x-rays before surgery. Radiologists are saying that the guidelines are one reason why they no longer require as many patients to stay overnight in the hospital after certain blood vessel x-rays.

One thing is certain: When practice parameters/guidelines are in place and a consumer version of the practice parameters is published for use by patients, the often-heard allegation of "lack of informed consent" will be heard less and less. Some health care practitioners may view the prospect of a dialog between practitioner and patient, each with his or her version of the relevant practice guideline in hand, as yet another burden for the health care profession to carry. Patients who are armed with their own practice guidelines when they come to the physician's office will certainly have more questions and will initiate more discussion regarding the proposed treatment. This may consume more time and affect the bottom line because fewer patients will be seen. However, when a physician charts reference to the practice guideline and the fact that the patient was referred to the consumer version of the practice guideline, and there was full discussion about the practice guideline, it will be extremely difficult for that patient to claim later that he or she lacked informed consent before the care/treatment/procedure began. Therefore, the patient who is armed with knowledge may be viewed as an irritant, but ultimately, that patient will have less to complain about if a recognized risk of the procedure is encountered post-operatively.

When practice parameters are discussed in the Hawaii Legislature, it is proposed that the treatment/procedure guidelines be included along with alternatives, the risks, so there can be no question about a patient's having participated in a discussion about these issues and the material covered in guidelines, such as those proposed in Maine. If practice parameters include a thorough discussion of the recognized alternatives and risks of a procedure, a physician who follows the guidelines and who furnishes to a patient the consumer version of the practice guidelines should never lose a case on the issue of lack of informed consent. This is particularly important because a recent Hawaii Appellate case says, in effect, that a patient who signs an informed consent form on which all of the pertinent information appears with respect to providing informed consent is not conclusive evidence that informed consent was obtained from the patient before a procedure.[3]

Legal Liability Fallout Under Managed Care

Maintenance of morbidity and mortality statistics with respect to practitioners such as surgeons will mean more stringent controls on the delivery of health care and, therefore, clearer guidelines for evaluating which physicians should and should not be licensed, have staff privileges, and how their care can be evaluated. Therefore, there will be a new balance struck between a physician's right to a license, to staff privileges, and cost-effective reasons for precluding or removing a license and staff privileges. We will see more administrative altercations between licensing authorities and physicians, and credentialing bodies in hospitals and physicians.

We will see more lawsuits against hospitals for negligent credentialing. Because there will be greater emphasis on affording privileges within much more stringent control parameters, patients' attorneys will look increasingly to the information available or what should have been available to an institution before a practitioner was granted staff privileges.

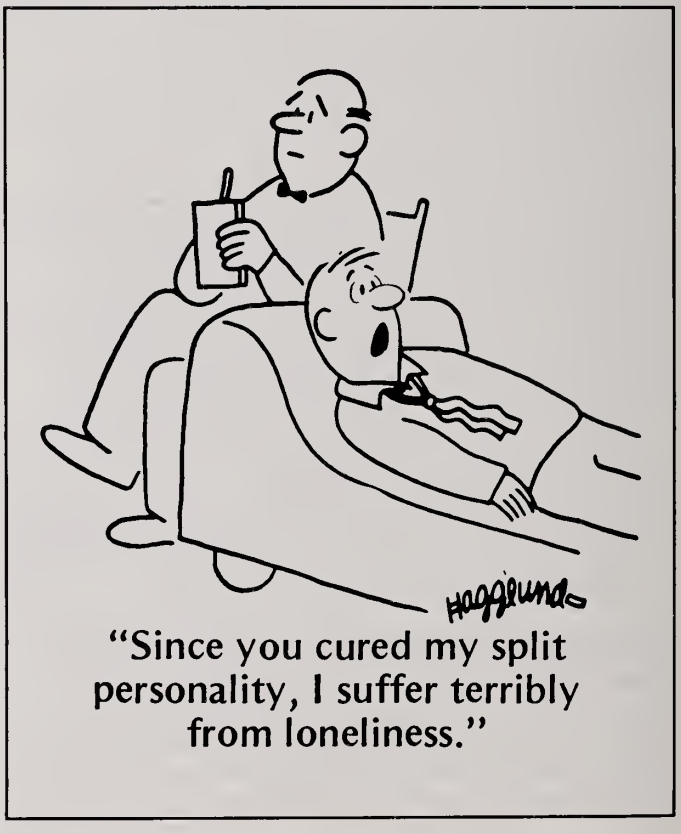
Market forces will move us toward capitation and reduction of hospital and physician-related costs. Therefore, we will see an expanded role of nurses and the creation of new areas of nursing liability. As an example, if patients are discharged earlier from hospitals to reduce post-operative hospital care costs, it will probably be nurses and not physicians who will go to the home of a patient for post-operative evaluation. This will require a higher level of decision-making among nurses and will require a heightened level of communication between nurses and physicians.

Of all the things that feel uncomfortable and are disliked most is *change*. In discussions with groups of physicians regarding what managed care will mean in terms of the law and liability, it is extremely obvious that physicians are anxious, fearful and angry about the prospect of the changes managed care will bring.

Whether it's lawyers who represent patients and cases against physicians, lawyers who handle the corporate and business aspects of a changeover into managed care, or lawyers who represent physicians in a medical malpractice lawsuit, physicians are now of the mind that all lawyers are the enemy and managed care is what lawyers are creating. This is not true. Economic forces are driving the health care delivery system into managed care. Although non-lawyers do not like to view lawyers as victims, the economic forces behind managed care are in fact victimizing attorneys as much as physicians. The economic forces are bigger than the medical and legal professions. Whether we are physicians or attorneys, managed care is coming and both professions are well advised to adapt as much as they can, rather than fighting the process along the way.

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Empathy and Medical Education

Irwin J. Schatz MD

Empathy is the feeling generated in physicians by patients when "I and you" becomes "I am you."[1] Spiro, in his elegant recent message, called it "an almost magical phenomenon."[1] Freud defined it as "the mechanism by which we are enabled to take up any attitude at all towards another mental life"[2]; others said it was "a feeling of being at home with the object contemplated as a friend," and "it includes a merging of the viewer with the viewed."[2]

Empathy is experienced often by physicians when they can identify sufficiently with their patients so that they feel some of the same elation, frustration, depression and pain of those for whom they provide care. It is an emotion that must be distinguished from sympathy, the major component of which is a feeling of wanting to help or of feeling sorry for someone. Obviously, too much empathy impairs the diagnostic and therapeutic process; there is a fine line between an overwhelming and unproductive identification with the patient, and an unfeeling excess of distant objectivity.

Unfortunately the process of both undergraduate and graduate medical education seems almost designed to drive empathy from the student and resident. Medical educators teach science. We stress objectivity. The collection of data is paramount. The goal of undergraduate medical education is that the student acquire the necessary skills, habits, attitudes, values and knowledge sufficient to interview a patient, collect, synthesize and integrate the clinical data and formulate an appropriate diagnostic and therapeutic plan successfully.[3] Nowhere in this catechism (promulgated initially by the Association of American Medical Colleges) is there mention of empathy.

The student is transformed into a physician during the clinical clerkship—a crucial and central event in his or her education. This is preceded by a variable period of immersion in the basic sciences, sometimes attached to clinical problem solving. Success is measured by objective testing of data recall and problem-solving skills. The matrix from which all of these efforts emerge is one of competition. This is the framework around which the efforts of pre-med students, medical students and residents are centered. Competition pervades our system of medical education. Intellectual elitism is our standard; it is not the most compassionate or empathic student or resident but that student who achieves the highest grades on test scores whom we honor. It is no wonder that the lessons learned by our trainees are that the relationship with a patient has a low priority, that performance is measured best by grades, and that achievement is reflected by the prestige of the medical school and of the residency program at which the student is accepted for further training.[5]

Nowhere in this construct is there room for teaching or learning empathy—what Martin Buber has called "the I and thou." It is true that the threshold between empathy on the one hand and lack of caring on the other is fuzzy. Too much empathy, an excessive identification with the patient, could paralyze clinical efforts. For instance, the emotions generated even in the most hardened physician who cares for the child dying of leukemia, can overpower and suppress the critical need for objective clinical assessment and action. Such empathy becomes counterproductive. Osler told us to maintain equanimity; yet although there should be some emotional distance from the patient, this should not be so much as to remove passion from the encounter.

Unfortunately, today this balance is out of kilter. Too often, in the modern environment of catastrophic illness and technical overkill, we lose sight of the patient as an individual. Too often at morning report or on ward rounds students and residents are heard talking about taking "hits," joking or laughing at the expense of a patient, or ignoring simple and heartfelt needs for empathy.

Spiro feels that "the increased emphasis on molecular biology to the exclusion of the humanities encourages students to focus not on patients, but on diseases."[1] This is conventional and traditional wisdom, but interest in the humanities does not necessarily imply a humanistic or empathic physician.[5] There clearly is a difference between the humanities and humanism; those interested in the humanities might turn out to be humane and sensitive physicians, but this is more likely related to self-selection than it is to effective immersion in humanities, transforming a previously narrowly focused student into the compassionate and empathic clinician hoped for. A consistent cliche in this area is the belief that the compassionate physician cannot be scientifically minded. As Seymour Glick has stated, "focusing on the humanities as playing the pivotal role in compassion is misplaced and represents a misunderstanding of what humanities can and cannot accomplish. After all, the humanities, particularly the arts, are ethically neutral. They provide important aesthetic values but inherently embody few ethical values. Some of the world's most heinous crimes were perpetrated to the strains of Haydn and Mozart by individuals immersed in the works of Goethe and Heine."[4]

Selecting a pre-medical student with a broad background in the humanities, or requiring that medical students read poetry and critique modern literature should not imply that these acts will *create* a humane physician; there are countless examples of

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caregivers with no background or interest in the humanities who are empathic and understanding. It is likely that interest in the humanities and the potential for humanism go together.[3]

Finding a Connection

The single most important measure that we could take to teach empathy is to promote a connection between the patient and the physician. This can be taught by example and, perhaps, should even be required. Such a connection implies a human relationship and a transference of emotion from one person to the other. The history taker should no longer remain only a passive recipient of data whose role is to extract relevant objective information from the patient. He or she must first and foremost develop a true and clear identification with the patient as a person.

The induction of empathy is dependent on the initial patient encounter and how it is structured. There are several mechanisms that can be established which can create and maintain empathy between the trainee and the patient:

1. Develop a connection by finding out who the patient is. This means that the usual and traditional way of taking a history by asking the name, the chief complaint, and the history of the present illness is misplaced. The first step should be for the student/resident to introduce himself or herself, and ask the patient for name and age and then say something like, "I'd like to get to know you a little bit before discussing the reason why you are in the hospital. Tell me about yourself." As meticulously as the experienced history taker would be in extracting information about the details of illness, so he or she must exploit this open-ended invitation to learn about the patient. This must provide a glimpse into the patient's life, personality, sensitivities and environment; it will generate the kind of empathic connection that is essential for the humane physician. Only after the historian determines that he or she knows the patient as a person—and it does not take very long to generate this sense—should the standard, traditional history be taken.
2. The trainee should focus on the most important symptom and relentlessly pursue it. Most patients will not fully describe the major reason for coming to the hospital without being prompted. For instance, if the patient complains of shortness of breath, far more time should be spent on the description of that symptom—what the patient experiences, how the patient perceives it, what emotions are engendered by it, what the patient fears about it—than in an unrelated and time-consuming pursuit of remote past illnesses. We see this most prominently in the student historian who has not yet learned to take a history efficiently; five or 10 minutes may be spent exhaustively searching for information about irrelevant family history in an elderly patient, but not adequately obtaining information about the principle symptom.

Why such a focus on the major complaint, even in excess of the need to understand it for clinical reasons? Because it generates empathic feelings even in the most hardened caregiver and because it provides the historian an opportunity to *feel for* the patient (compassion), *with* the patient (empathy), and *sorry for* the patient (sympathy).

3. During training each student or resident should have experience in what it feels like to be a patient. I would divide these into the following categories:

Loss of Identity Experiences

Each student should be required to be admitted to the hospital for a day, have all familiar bedclothes removed, and wear a hospital gown. He or she should have an enema and have a portion of abdominal or pubic hair shaved.

Gurney Experiences

Students and residents should lie face-up on an open gurney, with or without a thin blanket covering them, in a radiology department, apparently unattended and waiting for a procedure. No matter what the disability, the student or resident should lie perfectly flat, facing the ceiling. As an alternative site, the trainee on the gurney should be placed with the same attire in a patient and staff elevator during a busy time of the day when students, house officers, attending physicians, housekeeping personnel, crash carts, and various equipment are all transported at the same time. Preferably this should occur late in the day, when students and residents will be discussing "hits," difficulties with recalcitrant patients, and plans for the weekend. The acute diminution of personal worth and self-esteem generated by such experiences will be interesting and enlightening for the trainees.

Procedure and Disability Experiences

- Each student or resident must, during training, experience a series of rectal and/or pelvic exams, usually by groups of trainees. Furthermore, each student or resident must have at least one endoscopy performed (sigmoidoscopy or upper GI).

Each subspecialty trainee should be required to experience the following in their particular disciplines:

- The orthopedic fellow should be required to wear a non-weight-bearing cast for a week.
- The ophthalmology trainee should have his or her eyes patched to create temporary blindness for two days.
- The gastroenterology fellow should undergo jejunal biopsy and colonoscopy.
- The cardiology fellow should undergo right heart catheterization.
- The hematology/oncology trainee should undergo a bone marrow aspiration.
- The urology fellow should undergo a transrectal ultrasound examination of the prostate gland.

There will be other procedures and/or temporary disabilities with an acceptably low risk that should be identified as relevant for other trainees.

These are serious suggestions. It is remarkable how sobering such experiences can be for those who provide care. Unfortunately, periodic reinforcement may be necessary.

4. Each supervisor/teacher must be required to demonstrate empathy. This is not an outlandish suggestion—just as we each demonstrate the proper technique of auscultation of the heart or palpation of the abdomen, so should we be required to show that as practitioners and teachers we can and will develop empathy with our patients.

Summary

Spiro has said, "computed tomographic scans offer no compassion and magnetic resonance imaging has no human face. Only men and women are capable of empathy."[1] Empathy is an essential and required part of our roles as caregivers. We must enhance this natural emotion that exists in each of us; we can do so by carefully designing a curriculum, much as we would for

learning about the physiology of the liver.

The roots of our need for detachment and equanimity go back to Sir William Osler, but the pendulum has swung too far, and the need for retention of millions of data bits overwhelms our souls. Although excessive emotion is destructive and counterproductive, we must not suppress our passion—but control it. The best physician both *feels* with the patient and prescribes *for* the patient at the same time. To do one without the other is inadequate care. As medical educators our task is clear.

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Nonclinical Use of Medical Skills: Beneficence Lost?

Kim Marie Thorburn MD

The first time that I was asked to probe a rectum to search for sequestered drugs remains fresh in my memory. The correctional lieutenant, commander of the watch, seemed more menacing than the convict suspect as I attempted to explain my refusal to participate. "Yes, I am employed by the prison, but I am a physician. My profession's code of ethics prevails."[1-2]

It may have been the first demand to apply my medical skills to a body-cavity search but the issue of nonclinical use of medical skills was not new to me. The incident took place at San Quentin Prison, site of California's gas chamber. State regulations call for doctors to pronounce cessation of vital signs during executions. Before accepting a position at the prison, I sought assurance that I would not be expected to work in the death chamber in the event of an execution.

The ethical principle in these examples is beneficence. We physicians use our special skills for the good of our patients.

It could be argued that there are times when our skills must be applied for the good of the community. Retrieval of sequestered drugs, for example, might benefit the prison community by preventing access to harmful substances, needle sharing and accumulation of debts. However, Jonsen et al argue that competing ethical responsibilities must be prioritized and the patient's medical interests receive greater weight than public good.[3]

Beneficence is grounded in a fundamental medical premise: The patient must trust the physician.[4] The physician's skills signify life or death, health or illness; violation of the trust disrupts the patient-doctor relationship. The physician loses the opportunity to intervene and help the patient with his or her substance abuse, the opportunity for a potentially more sustained benefit than a one-time interruption of drug trafficking.

Doctors' involvement in executions might seem a clear-cut misuse of clinical skills. However, it was not until 1980 that the American Medical Association resolved that physicians should not participate in executions.[6] Most states that execute have statutory or regulatory requirements for physicians to be present.[7] Even after the AMA pronouncement, some physicians have argued there is a role for doctors at executions because the death penalty is legal.[8]

Determination of competence to be executed is still controversial. The AMA awaits action by the American Psychiatric Association on whether it is prohibited participation in executions. In 1986, the United States Supreme Court decided that it is cruel and unusual punishment to execute condemned people who, because of mental illness, do not understand their wrongdoing or the consequences of the penalty.[9] (Prior to 1986, this was also customary law.) Psychiatrists are asked to render opinions on measures of competency, opinions that can contribute to the killing of the person whom they examined.[10]

One argument that favors psychiatrist involvement in competency-to-be-executed assessments (and other judicially mandated evaluations) is that forensic medicine is a bona fide field of specialty in which doctors do not have patients. Forensic psychiatrists and others serve important legal functions and work as objective experts for the courts and other quasi-legal entities. Beneficence is not an issue.[11]

Could this be a slippery slope?

What then about demands for application of medical skills in the interest of the military, a prison, or an industry?[12-13] The primary mission of these institutions is defense and war, detention and punishment, or manufacturing and production, not medical care of soldiers, prisoners, or workers. These institutional missions could easily corrupt professional values if doctors readily used their skills to serve military, prison, or industrial purposes.

Other demands for physicians' clinical skills are more insidious. Some may arise from the adversarial nature of the legal system. There is a tendency to cast many societal decisions as polar, an individual's needs against the public good. The medi-

cal profession is sought to render opinions about an individual's needs. Disability assessments are an example. We are also involved in welfare decisions, child placements, insurance eligibility and other situations in which we apply our skills for purposes other than to care for the patient.[12]

It is true that our assessment may help the individual, such as a truly needy patient who receives disability benefits. But it is also possible that we may contribute to a decision not to render benefits. Such a decision can be quite disruptive of the doctor-patient relationship. The risk arises because these are nonclinical uses of medical skills—beneficence lost.

The contemporary transformation of the delivery of medical care could further erode the principle of beneficence as a premier ethical premise of the medical profession. More and more, physicians are finding themselves in institutional relationships. In contrast to the prison or military or industrial physician, the institutions do not seem to be at cross-purposes with our professional mission. They are institutions, such as health maintenance organizations and other managed-care entities, whose purpose is to organize health care for patients. Problems will arise because institutions serve groups. Physicians care for individuals. The principle of beneficence is more important than ever as a guide to our practice of medicine.

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Consent for Children as Organ Donors

Rodney W. Williams MD, JD

The use of children as organ donors has been a source of legal and ethical concern since transplantation became generally available.

Introduction

The number of diseases in children successfully treated by bone marrow and solid organ transplantation continually increases. The availability of a histo-compatible minor sibling as a donor has raised ethical and legal issues since transplantation became available. Organ donation represents a significant risk to one child (the donor) while the benefit accrues to a second child (the recipient). Parents who decide for both children must deal with this conflict.

St Francis Medical Center has devised a consent procedure that attempts to avoid parental conflict of interest, recognizes the emerging competency of the child donor, and provides a measure of protection for the donor.

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Sophie's Choice

In *Sophie's Choice,*[1] a mother was forced to decide which of her two children would be killed in a Nazi concentration camp. Early commentators portrayed parental consent for their child's organ donation similarly, refusing to acknowledge that organ donors benefited from the donation:

> [T]he parents should not be allowed to deprive a child of one of his vital organs without his consent or his intelligent comprehension...[I]t is considered almost impossible to support the view that parents should be allowed to consent to the removal of organs from minor children. Actually, legislation should be passed to prohibit children under a certain age from acting as donors.[2]

The Supreme Court of the United States in a different context has stated that while parents may be free to become martyrs themselves, it does not follow that they are free, in identical circumstances, to make martyrs of their children before they have reached the age of full and legal discretion when they can make that choice for themselves.[3]

Parents are given broad authority to enter into contracts for their children and to consent to medical treatment. Since organ donation is not medical treatment, however, consent should not extend to procedures such as organ donation where the benefit accrues to one child while the risk is borne by a second. Does the decision presented to the parents differ from Sophie's choice only in degree and not in kind?

Solomon's Decision

In one of the earliest recorded cases involving disputed parentage, King Solomon, without the benefit of DNA testing, awarded custody of the child to the mother who acted in the child's best interest by refusing to consent to the child's hemicorpectomy.[4] The courts have adopted this standard routinely approving intrafamily donation and recognizing that the organ donation actually would be in the best interest of the donor.

In Kentucky, in the case of *Strunk v. Strunk*,[5] a 27-year-old mentally incompetent ward of the state was the only medically acceptable kidney donor for his 28-year-old brother. Psychiatric testimony in that case supported the court's conclusion that the donation would be beneficial to the incompetent because the psychological benefits and the continuing close relationship of the siblings outweighed the minimal risks of the procedure.

Similarly, in a 1979 Texas case,[6] the court authorized the mother of a 14-year-old girl to consent to the donation of one of her kidneys to her brother, again finding the "substantial psychological benefits" of donation outweighed the minimal risks involved.

In other circumstances involving family members, the courts have refused to authorize the procedure when no benefit could be demonstrated. In one of these cases,[7] the father of twins sought to compel testing to determine if they were suitable donors for their half-brother, his leukemic son. The mother of the twins had never been married to their father and had sole care and responsibility for the twins. The court, in refusing to allow the twins even to be tested as potential donors, noted that, though the potential donors and recipient shared the same biological father, there was no evidence that they had or would have a close relationship and, therefore, there was no benefit to the potential donors.

Similarly, a Wisconsin court was asked to authorize a kidney donation from a catatonic schizophrenic to his sister. After hearing testimony that the donor was "indifferent to his environment" and that his disease was a "flight from reality," the court refused consent, finding that there was absolutely no evidence that any interests of the ward would be served by the transplant.[8]

The American Medical Association in a Code of Ethics report agreed with the *best-interest* approach when it made the following statement:

> The merits of a best-interest standard include its ability to incorporate the preferences of children as evidence of what is in their best interests without relying solely on a fictional determination of what they would want were their values more mature. Best interest also allows for the consideration of potential psychological benefits, when they exist, and weighs the medical risks of transplantation, rejecting transplantations which pose an unacceptably high risk to the minor source...[E]vidence of future benefit to the minor source should be clear and convincing. Possible benefits to a child include the following: Continued emotional bonds between the minor and the recipient; increased self-esteem; and prevention of adverse reaction to death of a sibling. Whether a child will capture these benefits depends on the child's separate circumstances.[9]

The AMA position recognizes the benefits to the donor, but also concedes that these benefits are not absolute and must be balanced against the risks. A decision about bone-marrow donation is comparatively easy—there have been no deaths associated with the procedure, and the bone marrow regenerates. Kidney transplant involves the permanent loss of a kidney and a higher perioperative mortality. According to Livingston Wong MD at St Francis, eight kidney donors have died in the perioperative period. Would the benefits described in this excerpt justify a lung donation?

Judicial Procedure

Early skepticism about the value of organ donation to the donor paralleled a societal debate about the proper forum in which such bioethical concerns could be addressed. A Massachusetts court[10] in discussing the use of a guardian *ad litem* to make decisions for the mentally incompetent, as opposed to the patient's family and family physicians and hospital committees stated:

> We take a dim view of any attempt to shift the ultimate decision-making responsibility away from the duly established courts of proper jurisdiction to any committee, panel or group, ad hoc or permanent...We do not view the judicial resolution of this most difficult and awesome question... as constituting a 'gratuitous encroachment' on the domain of medical expertise. Rather, such questions of life and death seem to us to require the process of detached but passionate investigation and decision that would form the ideals under which the judicial branch of government was created. Achieving this ideal is our responsibility and that of the lower court, and is not to be entrusted to any other group purporting to represent the 'morality and conscience of our society,' no matter how highly motivated and or impressively constituted.

When consent for the minor donor is sought through the legal system, the court usually appoints a guardian *ad litem* to represent the child's interest. A guardian *ad litem* would typically determine that the procedure was necessary; the risks to the donor were minimal; the donor was willing to help his or her sibling; the parents were fully informed about the risks to the donor and consented. The judicial process also involves other steps that are time consuming and costly to the patient, the hospital, and the health care providers involved.

After careful evaluation of the guardian *ad litem* process and discussion with Mainland transplant centers, St Francis Medical Center decided the judicial process was too cumbersome, time consuming, and costly. The medical center now uses an alternative procedure to the traditional judicial system. The objectives are 1) to adequately consider the interests of the prospective minor donor; 2) to utilize impartial advocates who have no involvement in the bone marrow transplant procedure; 3) to be expeditious, because of the time pressures created by the instability of the potential recipient's illness; and 4) not to impose additional financial or emotional burdens on the family already under stress because of the seriousness of the illness.

This alternative procedure utilizes an ad hoc committee, which is different in each case. The committee consists of a child psychiatrist/psychologist, a pediatrician, and another member of the medical staff with no direct interest in the case. The committee members are chosen for their ability to communicate with children and their knowledge of child development.

The proposed donors are interviewed individually by the committee in a supportive environment to determine their understanding of their role in the transplant procedure and whether or not their decision-making is free from duress and based on adequate information. The interviewing process is informal and begins with questions about the donor and his or her interests. The committee asks how the decision to donate was made and if he or she wants to donate.

One concern of the committee is the degree of parental influence on the potential donor. Recently, an ad hoc committee was chatting informally with a minor donor and her parents prior to an individual meeting with the child. All attempts to engage the donor, a 14-year-old, failed. When asked a question, she would frequently shrug noncommittally or look at her parents who were quick to answer for her.

While meeting with the committee alone, the child readily disclosed her fears regarding the procedure, especially the needle sticks involved, as she had already undergone one bone marrow biopsy and aspiration.

Q (from a committee member): Well, have you talked about these fears with your parents?

A: Yes.

Q: And what did they say?

A: They said, "You must be strong."

Clearly the parents were not giving this adolescent much room to make her own decision.

The committee explored the family structure a little farther and found that there was a grandmother who was a prominent member of the family and a significant person in the life of the donor.

Q: Did you discuss this with your grandmother?

A: Yes.

Q: And what did she say?

A: She said I could do whatever I wanted and I didn't have to do this if I didn't want. It was my decision and she would still love me.

On further questioning with the donor, she disclosed a similar conversation with her recipient sister.

Q: And what did your sister say?

A: She also said that I should make my own decision and that I didn't have to do it if I didn't want to.

Q: And what did you decide?

A: I decided to help my sister. We fight a lot, you know, but I still want to see her get better and help if I can.

Based on the conversation about the grandmother and recipient, the committee decided that she did make her own decision to support her sister. She was able to articulate her fears and talk about the pressure from her parents but still had sufficient presence of mind to consult other significant family members and, most important, her recipient sister. Her conversation about her fears, her parents, her grandmother, and her sister undoubtedly mirrored the conflicts in her own psyche. Articulating the pros and cons in the manner she did and making a choice convinced the committee that the child was indeed mature enough to make this decision and that the parental influence, though a factor, was not determinative.

Conflict of interest usually occurs when the parent or parents are asked to put a healthy child at risk to assist the ill child. However, it can also occur when the child is asked to be the donor for a parent. One father, when asked about the decision to use his child as the donor for his wife, the child's mother, responded, "Of course there is a conflict. Although the risk is minimal for my child, there is still a risk. The risk for my wife is high, but there is still a chance. But he said he wanted to do it no matter what. He knows the risks and he also understands that no one else can be the donor. The major conflict is not with me, but with my son. If he decides not to be the donor, his mother will die; if he is the donor, he will experience some discomfort, but he has the knowledge that he tried to help her. Doesn't that outweigh any risks or conflicts?"

The case went to the ad hoc committee. The committee agreed that the child was very knowledgeable about the transplant procedure and all of the risks involved. The child did not experience any adverse reactions from being the donor.

The ad hoc committee has been utilized only for minor donors who were developmentally appropriate for their age. The procedure could also be used for developmentally delayed donors. Adult retarded patients, however, may present a different set of issues as they may already be under the care of a guardian or a ward of the state. In that scenario, the decision would be made by the responsible entity. Nonetheless, the ad hoc committee would still be an appropriate forum in which the guardian could obtain the information necessary to make the decision for the ward.

Although the use of the ad hoc committee has been effective in Hawaii, it may not be as effective in other states where *ohana* is not as important. The committee is efficient and less costly than the judicial system, but is not without its problems. Such problems include finding members who are willing to participate, are available on short notice, and who are qualified.

Although the ad hoc committee may not be the universal answer, it does provide a forum in which the particular needs of the child donor can be more accurately determined and addressed than under the traditional judicial system.

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Toward An Exit Visa—Regulating Health Care Decision-Making

James H. Pietsch JD

Societies around the world continue to grapple with the problems of making choices about health care, including choices for people who cannot choose for themselves. As the world population continues to age, the number of persons who become mentally incapacitated before they die will increase. As a popular retirement location, Hawaii will not be immune to this worldwide phenomenon. In spite of educational efforts, legislative and regulatory activity, it is not uncommon to find many individuals still have not made any provisions for the care or for the protection of their own persons.

Legislation that would statutorily recognize surrogate (commonly called "family consent" or "default") health-care decision-making was considered by the Hawaii state legislature in its 1995 session.[1] Surrogate decision-making statutes have been enacted in at least 24 states and the District of Columbia.[2] Generally, surrogate decision-making statutes designate which persons are empowered to make health care decisions on behalf of an individual who has not already made any advance decisions and who is no longer considered capable of making decisions for himself or herself. One of the stated purposes of the proposed legislation is to assure that an individual's autonomy and rights under state law are protected.

As in other states, Hawaii's health care decision-making legislation has developed in fits and starts, usually in reaction to troublesome situations. As a result, we now have a somewhat fragmented, incomplete, and sometimes inconsistent set of rules that attempt to address how decisions are made for individuals who are either no longer able to make decisions for themselves or who are perceived to be unable to make decisions.

Doctors, other health care professionals, and lawyers often encounter patients or clients with varying levels of mental capabilities. Under most circumstances, of course, the client or patient can be assisted without the need for legal intervention. Many clients are fully able to make decisions for themselves. Others may appear to be questionably, partially or only intermittently, able to make or communicate decisions. A few will be totally unable to make or communicate decisions. Still others will not want to make a decision or would want somebody else to decide for them.

Increasingly, in the realm of decision-making, the fields of law and medicine intersect. Lawyers are seen serving clients in hospital and nursing home settings. Doctors are asked to provide opinions about the mental capacity of individuals who are being asked to sign legal documents. Lawyers are asked to participate in hospital ethics committee deliberations. Doctors are asked to provide testimony in guardianship actions. Medical students have a legal component to their studies. Law students have an opportunity to study health-care law.[3] Some individuals are both doctors and lawyers. Others find themselves weaving in and out of the two worlds, often by chance. Ethicists, nurses, paralegals, and social workers often form the link between law and medicine. In this aging world, doctors and lawyers are working closer than ever in facing incapacity issues, often with the same patient or client.

Incompetency or Incapacity

In working with patients or clients the question often arises as to whether the individual has "competency" or the "capacity" to make decisions. Distinguishing the ostensibly comparable concepts of (in)competency and (in)capacity may be of some assistance in differentiating these terms. Initially it is important to recognize that adults are presumed to be competent and to have the capacity to make decisions although this presumption is rebuttable.

The concept of incompetency is generally considered to be a legal status imposed by courts. Judicial findings of incompetency are infrequent. When judicial involvement is considered necessary, it is most often in the context of determining whether the appointment of a guardian or commitment to a mental health institution is appropriate.[4] Following presentation of evidence in a hearing, a judge may find an individual to be legally incompetent and appoint a guardian to make decisions on behalf of the "ward" or "protected person" or, if applicable, subject an individual to involuntary mental health treatment. The evidence usually includes the testimony of a psychiatrist or other medical authority skilled in the field of the purported disability of the subject of the proceeding.

The concept of capacity (and incapacity) is more related to specific activities and the determination of decisional capacity is considered to be within the domain of the medical profession. Decisional capacity is usually considered to be present when an individual is sufficiently able (capacitated) to make a particular decision if, minimally, he or she has the ability to understand the nature of the problem or activity he or she is facing, to understand available alternative courses of action (including no action), to understand the possible risks and benefits attaching to each of these alternatives, and is able to express a choice. Each specific activity which involves a decision, such as provision of informed consent for medical treatment, execution of a will, trust, living will, or power of attorney may have a different

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required level of decisional capacity to be considered "valid." The legal profession is beginning to realize that it must do a better job of addressing current dilemmas concerning decision-making capacity. More attention is being given to looking at a means of using more functional, decision-specific capacity evaluations. As in other professions, this increase in attention has been accelerated in part by the increase of such devastating mental afflictions as Alzheimer's and related diseases.

Since the terms "(in)competency" and "(in)capacity" are still used almost interchangeably, even in statutes, it is useful to look at the context of the situation to determine whether the wording is used as a legal term or as a medical term. Hawaii statutes, as do many other state statutes, generally use the terms "capacity" and "incapacity" when addressing judicial proceedings involving the questions of legal competence. In order to clarify what type of situation is being addressed, it may be best to use the general term (in)capacity and then mentally add modifiers (ie, legal (in)capacity (pertaining to one's legal status) and decisional (in)capacity (pertaining to ones capability to make decisions) as appropriate.

From the outset it should be emphasized that an adjudication of incompetency represents a dramatic intrusion on the basic civil rights of the subject of the proceeding. Since a determination of legal incompetence can have a dramatic and long-lasting effect on a person's life, it was suggested at the July 1988 ABA National Guardianship Symposium that "incapacity should be supported by evidence of functional impairment over time" and that "age, eccentricity, poverty or medical diagnosis alone should not be sufficient to justify a finding of incapacity."[5]

To complicate matters, there are different standards for determining incapacity. The standard to be applied depends on the type of decision or instrument or proceeding involved. For example, although an individual may be determined to be incompetent for the purposes of appointing a guardian for that person, the same individual may be deemed competent to execute a will. Likewise capacity to execute a will may require less "competency" than the power to make a gift or to enter into a contract.

Parens Patriae

There are, of course, legal guidelines to determine legal incapacity. The state, in exercising its *parens patriae* (Latin for "father of the country") powers, has the authority to place limitations on the rights and autonomy of a legally incapacitated person. While there is a presumption of legal capacity, when an individual can no longer make decisions necessary to manage personal affairs or property, someone else may need to be appointed to make those decisions. This is usually accomplished through the guardianship process. In Hawaii, *Hawaii Revised Statutes* Section (§) 551-1 states that "family courts have jurisdiction to appoint guardians of persons and circuit courts have jurisdiction to appoint guardians of the property." [6]

Hawaii law (Hawaii Revised Statute § 560:5-304) provides that the family court may appoint any competent person, whose appointment would be in the best interest to the alleged incapacitated person, as a guardian for the person as requested if it is satisfied that the person for whom a guardian is sought is incapacitated and that the appointment is necessary or desirable as a means of providing continuing care and supervision of the person of the incapacitated person.

There is often a stigma attached to an adjudication of legal incapacity and a concomitant loss of civil rights. Usually the old concepts of a global or a complete approach to a determination of legal incapacity is utilized.[7]

Determining Legal Incapacity

There is no single conclusive test to determine capacity in court but it is usually based on a medical diagnosis and prognosis.

Three main approaches[8] to determining capacity seem to have been developed:

1) The outcome approach—decisions that are inconsistent with the values of the helping professionals are conclusive of the person's incapacity.

2) The status test approach—an individual's capacity is judged by his or her physical or mental status or diagnosis without further inquiry about how the status actually affects the person.

3) The functional approach—focuses on the individual's personal ability to function in decision-making situations. Capacity is determined on a decision-specific basis. Capacity is not treated as an all-or-nothing affair. Partial capacity is not the same as incapacity. Capacity may wax and wane.

In 1982, the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research suggested that in making determinations about a patient's competency, a clinical assessment should be made to include an inquiry into the extent to which a patient possesses:

1) a set of values and goals

2) the ability to understand information and to communicate and

3) the ability to reason and to deliberate about his or her choices and their consequences.

No matter what approach is taken in any particular guardianship hearing, the court has the power to appoint a guardian *ad litem* to defend the interests of the person who is the subject of the proceeding.[9]

Capacity Issues Outside of Guardianship

There are yet different standards for determining incapacity outside the guardianship arena. The standard to be applied depends on the type of decision or instrument involved. For example, although an individual may be determined to be legally incapacitated for the purposes of appointing a guardian in a guardianship action, the same individual may be deemed competent to execute a will. Applicable standards and tests for determining capacity historically are well developed, especially in the areas of trusts, wills, advanced medical instructions, and powers of attorney.

Powers of Attorney

A power of attorney is a written instrument through which an individual appoints another person as his or her agent (or attorney-in-fact) and grants that person authority to act on his or her behalf to perform certain acts. Powers of attorney traditionally were the written manifestations of the creation of an agency relationship for financial, business or legal purposes. They continue to play an important role, especially in dealing with financial issues relating to a person's institutionalization and payment for health care. It was only rather recently that this legal tool has been utilized to make health care decisions. This health care aspect of powers of attorney will be discussed in the following section concerning advanced medical instructions

and informed consent. Durable powers of attorney are statutorily recognized by law (in Hawaii Revised Statute §551D). It should be noted that there is no specific requirement under Hawaii law that powers of attorney be accepted by third parties.[10]

Informed Consent and the Patient Self-Determination Act

It is clear that all competent individuals have the fundamental right to control the decisions relating to their own medical care, including the decision to have medical or surgical means or procedures calculated to prolong their lives provided, continued, withheld, or withdrawn. The basis for making decisions center around the concept of informed consent and a person's constitutional right to refuse unwanted medical treatment.[11]

Hawaii has adopted a strong public policy in favor of the person's right to accept or refuse treatment. Hawaii law provides that "all competent persons have the fundamental right to control the decisions relating to their own medical care, including the decision to have medical or surgical means or procedures calculated to prolong their lives provided, continued, withheld or withdrawn. The artificial prolongation of life for persons with a terminal condition or a permanent loss of ability to communicate concerning medical treatment decisions, may secure only a precarious and burdensome existence, while providing nothing medically necessary or beneficial to the person."[12]

As of December 1, 1991, all states and most health care facilities must comply with new Medicare and Medicaid rules regarding patients' right to control their health care treatment. The amendments are known as the Patient Self-Determination Act (PSDA).[13]

The purpose of the PSDA is to help individuals understand that they have strong rights regarding their medical treatment and to help them exercise those rights if they wish. This law was intended to help avoid problems and litigation over the initiation or continuation of unwanted life-prolonging medical treatment. The PSDA prohibits the health care organization from conditioning the provision of care or otherwise discriminating against patients based on whether or not advance directives have been executed. The PSDA also requires each state to develop a written description of state law regarding advance directives. This description is to be distributed by providers to all adult patients upon admission. In an interesting twist, regulators seem to be using the PSDA to force guardianship on individuals who did not execute any advanced directives.

Living Wills

One of the most widely recognized and utilized written advance directives is the living will, or medical treatment declaration. A person can make a living will declaration directing the provision, continuation, withholding, or withdrawal of life-sustaining procedures in the event that he or she is no longer able to communicate medical treatment decisions.[14]

Living wills do not control all health care decisions but only control decisions related to life sustaining medical treatment upon certification by the attending physician that the patient has suffered a permanent loss of the ability to communicate concerning medical treatment decisions. Living wills, for example, do not normally apply to emergency room situations. They do not apply to consent for ordinary medical treatment decisions. They do not apply to consent to admission to a health care facility. They normally do not affect DNA (do not resuscitate) orders. Many people do not know that a patient who suffers cardiac or respiratory arrest in a hospital will routinely be resuscitated unless there is a written DNR order in the medical record. The DNR order is only an order to forgo the otherwise automatic initiation of cardiopulmonary resuscitation and it does not alter other treatment decisions. Of course, patients should be encouraged and prepared to discuss these matters with a physician and to determine what tools can be utilized to address them.

Of course, it is clear that it is not (yet) always necessary to have a validly executed living in order to make decisions about life-sustaining medical treatment.[15] The question of who decides who makes the decision may not be as clear.

Durable Power of Attorney for Health Care

A Hawaii law enacted in 1992 made changes to Hawaii's Durable Power of Attorney Statute and recognized the right of an individual to appoint an attorney-in-fact or agent to make health care decisions.[16]

If properly drafted, the durable power of attorney for health care also can be quite useful in allowing an attorney-in-fact to talk to the principal's doctors, to have access to medical records and to enforce the principal's decisions through court action if necessary. The durable power of attorney for health care can be included in a living will, or it can be used separately, either alone or in conjunction with a living will.

A competent person who has attained the age of majority may execute a durable power of attorney authorizing an agent to make any lawful health care decisions that could have been made by the principal at the time of election.[17]

At the heart of the new law is the provision that states "a durable power of attorney for health care decisions is presumed not to grant authority to decide that the principal's life should not be prolonged through surgery, resuscitation, life-sustaining medicine or procedures, or the provision of nutrition or hydration unless such authority is explicitly stated."[17] In other words, a person needs to state whether he or she is granting the authority to make such decisions.

There are certain limiting aspects of the new law which doctors should understand,[18] but under appropriate circumstances and if properly drafted, a durable power of attorney for health care can permit a patient to appoint an agent who can make legally recognized (and enforceable) decisions.

Proposed Surrogate Decision-making Legislation

Living Wills and Durable Powers of Attorney for Health Care must be made when individuals still have the capability to understand what they are doing. Unfortunately a large percentage of people who are considered to be unable to make decisions for themselves and who enter a health care facility or otherwise need health care treatment have not provided any such advanced medical instructions.

Historically, health care providers have turned to family members for consent in situations where an individual is no longer able to decide for himself or herself. This traditional approach to caring for one's own family members has been considered to be an accepted community practice in the health care community. Although there is a growing sense that this community practice is no longer legally adequate, there is no

actual legal prohibition against such a practice.

There has been, of course, an increase in federal and state regulation of the health care industry and an increased emphasis on preserving the autonomy of citizens. Further, the phenomenon of the increasing numbers of elderly citizens with chronic conditions, often accompanied an inability to make medical decisions is now forcing the community to reconsider how to make choices in medical decision-making in situations other than life-sustaining or life prolonging.

Federal regulations promulgated by the Health Care Financing Administration for long-term care nursing facilities have been interpreted by regulators as requiring any facility resident determined to be decisionally incapacitated to have his or her rights exercised by a person appointed in accordance with state law to act on a resident's behalf. In cases where a resident has not been adjudicated incompetent by the state court, the regulators go on to indicate any legal surrogate designated in accordance with state law may exercise the resident's rights to the extent provided by state law.[19] Since Hawaii does not have a statute which provides for surrogate decision-making in the absence of prior health care instructions (except for limited purposes under the living will statute), regulators have concluded that this situation may lead to a requirement for guardianship actions in court. Threats of citing facilities for noncompliance are increasing.

Whereas the current health care decision statutes do not, apply to such ordinary health care decisions as treating a cold or admitting a person to a long-term-care facility, Hawaii could end up with a rather peculiar result in the way it treats incapacitated individuals. Under certain circumstances its seems there would be less difficulty withdrawing or withholding life-sustaining medical treatment and permitting an incapacitated person to die than admitting the person to a health care facility or treating him or her. Current interpretations of regulations seem to require commencement of a guardianship action in court when an incapacitated person has neglected to make an advanced medical instruction and needs to be helped. With the time and expense it takes to go to court, it can seem easier to some to do nothing. There are, of course, advantages to considering a legally recognized and an expanded version of the traditional "family consent" practice. Certainly regulators will approve of added legislation to fill the current gap in the decision-making spectrum and health care providers may find some comfort in the protections that traditionally accompany such legislation. As long as a statute provides authority and protection, it may be that regulators and health care providers do not really care about the mechanisms involved in the surrogate decision-making statutes but the way that they are written could have a dramatic effect on the lives (or deaths) of the incapacitated person.

Most surrogate decision-making statutes have a listing of individuals (in a priority ranking) who may be looked to when health care decisions need to be made. This listing (or "hierarchy" of authorized decision-makers) usually gives highest priority to a person's spouse or another person who is most closely related to the individual, usually by blood. The theory is that these surrogates will be in the best position to know what the incapacitated individual would have wanted or what is in their best interest.

There can be distinct disadvantages to these surrogate decision-making laws. One disadvantage is the lack of flexibility involved in creating a hierarchy of decision-makers. Arguably, it is not always the person who is the closest blood relation who is the most appropriate decision-maker. Nontraditional families have the most to fear from a legislativelydetermined order of surrogates since the person who actually has the most significant ties to the individual who lacks capacity may not be included in the statutory scheme. Under a surrogate decision-making law, would a family and doctor somehow bypass a patient who is mentally incapacitated much of the time but may have moments of lucidity? Could a doctor follow directions of a surrogate that are inconsistent with the patient's previous statements? These concerns have been addressed to some degree in later drafts of the proposed legislation presented to the Hawaii state legislature. Safeguards pertaining to these concerns may or may not survive the next legislative process.

Much energy has been expended by many people in attempting to respond to the intimidating actions of the regulators. Perhaps we should be asking whether we really need another law on the books to tell doctors and health care facilities under what conditions they can take care of an individual's health care needs. Perhaps the rules cited by the regulators should be examined in light of the mood in Washington, DC to de-regulate government. It may be time to ask why we are so worried by the regulators and what would they actually do if we did not respond to their citation threats? Would they close down all health care facilities or stop health care providers from admitting or treating patients? Would they force us to flood the courts with guardianship actions?

On the other hand, perhaps the debate over surrogate decision-making will conclude that new laws or regulations are needed. If so, it may be the time to revisit the way we make all health care decisions, including decisions to forgo life-sustaining medical treatment. Rather than continuing in our fragmented, incomplete and frequently inconsistent method of approaching health care decisions, we might consider our predicament in a holistic and common sense manner. Otherwise any new law attempting to rectify this newest crisis may only add to the confusion.

Let us carefully consider these significant matters affecting the way we make choices. Let the choices be ours as a community. If we continue to demonstrate to the regulators that we will react to their every threat, we should not be surprised when they demand more and more governmental and legal involvement in health care decisions. It may not be so far-fetched to hypothesize that, ultimately, the regulators would embrace a requirement for an exit visa, prepared by an attorney and properly executed by a judge, prior to permitting a person to leave this world. If we let this happen, all I can hope is that those who oppose such a requirement be greeted (as expressed in Camus' *Stranger*) with cries of execration!

References and Notes

1. Senate Bill No 570, A Bill For An Act Relating To Health Care Decisions. This bill did not become law but other attempts to enact such legislation will likely be made in future sessions.
2. *Right-to-Die Law Digest.* Choice in Dying, 200 Varick Street, New York, NY 10014; (212) 366-5540.
3. Doctors and lawyers should each have at least some medical-legal reference, such as *Aging and the Law*: Strauss P, Wolf R, Shilling D. Commerce Clearing House: 1990. Health Law: Cases, Materials and Problems. Furrow, Johnson, Jost and Schwartz, published by West Publishing Company, 1993.
4. For an overview of incapacity issues, see for example, Planning for the Elderly or Incapacitated Client by S. Schlesinger and B. Scheiner, Published by Commerce Clearing House, Inc., 1990.
5. For an attorney there are also professional ethical issues to take into consideration in dealing with a questionably capacitated individual. In the Hawaii Rules of Professional Conduct, Rule 1.14 states:
 "(a) When a client's ability to make adequately considered decisions in connection with the representation is impaired, whether because of minority, mental disability, or for some other reason, the lawyer shall, as far as reasonably possible, maintain a normal client-lawyer relationship with the client.

(b) A lawyer may seek the appointment of a guardian or take other protective action with respect to a client, only when the lawyer reasonably believes that the client cannot adequately act in the client's own interest."

6. A few definitions may be helpful to an understanding of guardianship. Under HRS § 560:5-101: "Guardianship proceeding" is a proceeding to appoint a guardian for the person of an incapacitated person.
 A "protective proceeding" is a proceeding...to determine that a person cannot effectively manage or apply the person's estate to necessary ends, either because the person lacks the ability or is otherwise inconvenienced....
 A "protected person" is a minor or other person for whom a guardian of the property has been appointed or other protective order has been made.
 A "ward" is a person for whom a guardian of the person has been appointed.
7. HRS § 560: 5-304 provides that the court may specify areas in which the ward shall retain the power to make and carry out decisions concerning the ward's person, HRS § 560: 5-312 states that a guardian of the person of an incapacitated person has the same powers, rights and duties respecting the guardian's ward that a parent has respecting the parent's unemancipated minor child...
 For property matters HRS § 560:5-408 (3) provides that the court directly or through a guardian of the property has all the powers over the person's estate and affairs which the person could exercise if present and not under disability, except the power to make a will. Fortunately for the protected person, at least orders under these guardianship of the property proceedings have no effect on the capacity of the protected person. (See HRS § 560:5-408 (5).) Combine these proceedings with guardianship of the person proceedings, however, and many rights are in jeopardy.
8. See, for example, "Determining Competency" in Chapter 11, Health Law: Cases, Materials and Problems by: Furrow, Johnson, Jost and Schwartz, published by West Publishing Company, 1993 or Older Wards and Their Guardians by P. Keith and R. Wacker, Published by Praeger Publishers, 1994.
9. See Hawaii Revised Statute §551-2. In addition, Hawaii Rule of Civil Procedure 17(c) provides that "if the incompetent person is not otherwise represented in an action, the court may exercise this power in the interest of the incompetent person or shall make such other order as it deems proper for the protection of the incompetent person."
10. To be valid, a power of attorney should be executed properly and a person must know: what authority they are giving; to whom they are giving authority; the nature of the document in question. The Restatement 2d of Agency suggests that a person must have capacity before he or she can delegate authority to an agent. See *Restatement 2d of Agency, Section 20* (1958). Creation of a power of attorney requires that the principal be mentally competent at the time of execution. See, for example, *Testa v. Roberts*, 542 N.E.2d 654; 44 Ohio App.3d 161 (1988). In order to determine whether an individual has the requisite mental competency to execute a power of attorney, courts have developed tests for this specific area. In *Testa*, the court stated that the test to determine mental competency to execute a power of attorney is the principal's ability to understand the nature, scope, and extent of business he or she is about to transact. A power of attorney may be terminated under three circumstances: death, incapacity (or disability), or revocation. Death automatically terminates the power of attorney. Unless a power of attorney contains specific language providing that the powers shall continue (or commence) during periods of incapacity, the powers will terminate during such periods and the power of attorney is not considered "durable." However, an agent without notice of a principal's death or disability may still exercise the given authority if acting with good faith and in accordance with the granted authority. See HRS §551D-4(a),(b) and Golleher v. Horton, 715 P.2d 1225 (1985).
11. The State of Hawaii Board of Medical Examiners establishes standards for health care providers to follow in giving information to a patient, or to a patient's guardian if the patient is not competent, to insure that the patient's consent to treatment is an informed consent. The standards can include the substantive content of the information to be given, the manner in which the information is to be given by the health care provider and the manner in which consent is to be given by the patient, or a patient's guardian. These standards are contained within the HRS § 671-3 (Informed consent; board ot medical examiners standards) which provides, in part:
 "(a) The board of medical examiners, insofar as practicable, shall establish standards for health care providers to follow in giving information to a patient, or to a patient's guardian if the patient is not competent to give an informed consent. The standards may include the substantive content of the information to be given, the manner in which the information is to be given by the health care provider and the manner in which consent is to be given by the patient or the patient's guardian.
 (b) The standards established by the board of medical examiners include provisions which are designed to reasonably inform a patient, or a patient's guardian of:
 (1) The condition being treated;
 (2) The nature and character of the proposed treatment or surgical procedure;
 (3) The anticipated results;
 (4) The recognized possible alternative forms of treatment, including non-treatment, then the standards shall be admissible as evidence of the standard of care required of the health care providers..."
12. See Hawaii Revised Statute § 327D-1. Note: Under Hawaii Revised Statute § 327F, this right also includes the decision to accept or refuse the administration of psychotropic drugs by a health care provider for a psychotic condition. A person suffering from a psychotic condition, but who is competent and in a state of remission at the time of execution may execute a written declaration directing that medical treatment, including the administration of psychotropic drugs, be provided at a time when the person has lapsed and "lacks sufficient understanding to make or communicate responsible medical treatment decisions."
13. Also known as Public Law 101-508, enacted by Congress and signed by the President as part of the Omnibus Budget Reconciliation Act of 1990. The PSDA applies to all Medicare and Medicaid organizations, and specifically includes hospitals, nursing facilities, home health agencies, hospices, and prepaid health care organizations. It requires these organizations to do five things:
 (1) Provide written information to patients at the time of admission or initial provision of services concerning patients' rights under state law to make decisions about what medical care they want or do not want, including patients' right to accept or refuse life-sustaining or life-prolonging medical treatment.
 (2) Maintain written policies and procedures regarding advance directives, and provide written information to patients about what those policies are.
 (3) Document in the patients' medical records whether they have executed advance directives.
 (4) Ensure compliance with state law at each health care organization which is subject to the new federal law.
 (5) Provide information for the education of the staff and community on issues concerning advance directives.
14. Hawaii Revised Statute §327D-3 directs that declarations:
 (1) Shall be in writing;
 (2) Shall be signed by the person making the declaration, or by another person in the declarant's presence and at the declarant's direction;
 (3) Shall be dated;
 (4) Shall be signed in the presence of two or more witnesses who:
 (A) Are at least 18 years of age;
 (B) Are not related to the declarant by blood, marriage, or adoption; and
 (C) Are not, at the time that the declaration isexecuted, attending physicians, employees of an attending physician, or employees of a health care facility in which the declarant is a patient.
 (5) Shall have all signatures notarized at the same time.
 Hawaii Revised Statute § 327D-2 provides that a living will does not go into effect until a patient is certified "to have a permanent loss of the ability to communicate concerning medical treatment decisions." This refers to a state in which a person is diagnosed by a physician as:
 (1) Being in a persistent vegetative state with no reasonable expectation of regaining consciousness;
 (2) Being in a deep coma with no reasonable expectation of regaining consciousness; or
 (3) Having a permanent loss of the capacity to participate in medical treatment decisions, secondary to severe neurological or brain damage, with no reasonable expectation of regaining this capacity.
15. Hawaii Revised Statute § 327D-21 provides, "In the absence of a declaration, ordinary standards of current medical practice will be followed. Although declarations are desirable, nothing in this chapter shall be construed to require a declaration in order for life-sustaining procedures to be provided, continued, withheld, or withdrawn. If there is no declaration, then a verbal statement or statements if they are consistent made by the patient to either a physician or to the patient's friend or relative, may be considered by the physician in deciding whether the patient would want the physician to withdraw or to withhold life-sustaining procedures. Unambiguous statements by the patient, or reliable reports thereof shall be documented in the patient's medical record."
16. See Hawaii Revised Statute §551D-2.5(a). Concerns over artificially prolonging the dying process and how other health care decisions are made when a person is no longer able to communicate have led many people to appoint an agent ("attorney-in-fact" or "proxy") through such a durable power of attorney for health care. Through the health care power of attorney, the agent is able to carry out specific directives or make health care decisions in the absence of such specific directives. In Justice Sandra Day O'Connor's concurring opinion in *Cruzan v. Director, Missouri Dept. of Health*, 110 S. Ct. 2841, she stated that delegating authority to make health care decisions to a family member or friend is becoming a common method of planning for the future.
17. See Hawaii Revised Statute §551D-2.5(a). The requirements for making a durable power of attorney for health care under Hawaii law provide that it:
 (1) Shall be in writing;
 (2) Shall be signed by the principal, or by another person in the principal's presence and at the principal's expressed direction;
 (3) Shall be dated;
 (4) Shall be signed in the presence of two or more witnesses who:
 (a) Are at least 18 years of age
 (b) Are not related to the principal by blood, marriage, adoption; and
 (c) Are not, at the time that the durable power of attorney is executed, attending physicians, employees of the attending physician, or employees of a health care facility in which the principal is a patient; and
 (5) Must have all signatures notarized at the same time.
 At the heart of the new law is the provision which states that "a durable power of attorney for health care decisions is presumed not to grant authority to decide that the principal's life should not be prolonged through surgery, resuscitation, life-sustaining medicine or procedures, or the provision of nutrition or hydration unless such authority is explicitly stated." (See Hawaii Revised Statute § 551D-2.5(c). In other words, a person needs to state whether he or she is granting the authority to make such decisions.
 The new law specifically states that a durable power of attorney for health care decisions is only effective during the period of incapacity of the principal as determined by a licensed physician (see HRS § 551D-2.5(d), and that no person can serve as both the treating physician and attorney-in-fact for any principal for matters relating to health care decisions. (See HRS §551D-2.5(e).
 A durable power of attorney for health care decisions executed prior to the new law that substantially complies with the requirements of the new law, will be considered valid provided that the powers relating to the health care decisions granted in the power of attorney have not been previously revoked by the principal or otherwise terminated. See HRS §551D-2.5(f).
18. For example, the new law specifically states that a durable power of attorney for health care decisions is only effective during the period of incapacity of the principal as determined by a licensed physician (see HRS § 551D-2.5(d), and that no person can serve as both the treating physician and attorney-in-fact for any principal for matters relating to health care decisions. (See HRS §551D-2.5(e). Further, a durable power of attorney for health care decisions executed prior to the new law that substantially complies with the requirements of the new law, will be considered valid provided that the powers relating to the health care decisions granted in the power of attorney have not been previously revoked by the principal or otherwise terminated. (See HRS §551D-2.5(f).
19. Federal "TAG" #154 states "In the case of a resident who has not been judged incompetent by the state court, any legal surrogate designated in accordance with state law may exercise the resident's rights to the extent provided by state law."

The New Hawaii Comfort Care Only—Do Not Resuscitate Law

Gregory C. Gifford MD, JD

The new Hawaii law creating the Comfort Care Only-Do Not Resuscitate order allows terminally ill patients to be treated by ambulance personnel for comfort and pain control, and to not be resuscitated when they are near death.

There is a new law in Hawaii that is designed to resolve the pre-hospital dilemma of terminally ill patients who want access to medical care for physical comfort, but want to avoid undergoing attempted resuscitation when they start to die. Will the roles change for emergency medical services (EMS) personnel, first responders, and health care providers, including the terminally ill patients' private physicians under this new law?

This new Hawaii law was passed following years of consideration by legislators, EMS personnel, medical directors, religious and community groups, and the general public. It was signed into law in July 1994. Under this new Hawaii law, a patient can issue a "Comfort Care Only—Do Not Resuscitate" order if that patient is a competent adult and it has been certified by his or her physician to be terminally ill.

Competent adults have been held to have the legal right to refuse unwanted medical treatment by both Supreme Court decisions[1] and federal legislation.[2] This refusal can be expressed in advance of the unwanted treatment. The most effective inpatient mechanism to exercise this right in advance is the Living Will, an "advance directive" that says, in advance of an actual occurrence that could result in unwanted treatment, to withhold unwanted treatment.

The concept of Living Wills for inpatients in hospitals and nursing homes is accepted in this country and many others. The Patient Self-Determination Act (part of the Omnibus Budget Reconciliation Act of 1990[3] requires that written information regarding Living Wills be offered to patients during admission to facilities participating in Medicare or Medicaid funding (including hospitals, skilled nursing facilities, home health agencies, prepaid health care organizations, and hospice programs). However, the federal government has not addressed the pre-hospital situation.

The pre-hospital situation is unique in these two respects: The concept of presumed consent, and the extremely limited time to decide to resuscitate. It has long been legally presumed that patients want to be rescued and treated in an emergency setting if found unconscious or incompetent. An advance directive (Living Will) can overcome this presumption if it can be determined to be valid and applicable to that emergency setting and treatment—but how can its existence, applicability, and validity be determined in seconds?

Several states have tried to deal with this problem by enacting legislation to address the pre-hospital recognition of advance directives. Some states require time-consuming procedures, including reading and interpreting the documents themselves and then communicating with one or more physicians prior to honoring the advance directive. Other states, including Hawaii,[4] have enacted laws that allow for a method of immediate identification of terminally ill patients who choose not to be resuscitated. In Hawaii immediate identification is to be facilitated with a bracelet or necklace of a specified size and shape with "Comfort Care" engraved on one side, and the patient's name, date of birth, ethnic group, CCO number, and State of Hawaii engraved on the other side. Note that this CCO-DNR order is a different kind of advance directive than a Hawaii Living Will.[5] Living Wills allow individualized instructions for different patients, do not require illness, and do require two unrelated witnesses and notarization. Every Living Will must be read and interpreted before it can be honored. Since paramedics have only seconds to make decisions, some patients with Living Wills are undergoing attempted resuscitation. In contrast, a CCO-DNR order is between the patient, his or her physician, and one witness, and is more likely to be really private. The patient can wear a CCO-DNR necklace under his or her shirt and can keep his or her condition confidential; he or she is immediately identifiable as terminally ill and wanting comfort care only, not resuscitation.

Many EMS personnel say the Hawaii CCO-DNR law is long overdue. They have been forced to perform CPR on patients with terminal conditions whose families did not want resuscitation, they just wanted to be made comfortable and allowed to die in peace.

An information packet regarding the new CCO-DNR order has been prepared and includes information in both written and flow diagram formats. It also includes a sample CCO-DNR order and information regarding ordering the CCO-DNR bracelet or necklace and answers such questions as the following:

- What is a CCO-DNR order?
- Who can get a CCO-DNR order?
- Who can follow CCO-DNR orders?
- Guidelines for consideration by EMS personnel, first responders, and other health care providers (both individuals and organizations) when they see the CCO-DNR bracelet or necklace.
- Anticipated questions and answers.
- Revocation of the CCO-DNR order.

• Role of the base station physician.
• Role of the patient's physician

For this information packet explaining how the Comfort Care Only law can help your terminally ill patients, please call Jamie Go, (808) 733-9210 or write to the following address:

CCO-DNR Information
Hawaii EMSS Branch
3267 Kilauea Avenue, Room 102
Honolulu, Hawaii 96816

References

1. *Cruzan v. Director.* 110 S Ct 2841:1990.
2. Omnibus Budget Reconciliation Act of 1990. Pub L 101-508, §§ 4206,4751. 42 USC § 1395cc(f)(1) & 42 USC § 1396a(a) (Supp 1991).
3. OBRA § 4206a(2), 42 USC § 1395cc(f)(1)(a)(i),(ii).
4. Hawaii House Bill 2553, eff July 1994.
5. Hawaii Rev Statutes Ann. § 327D-2: 1991.

Age–Based Rationing of Health Care

Patricia Lanoie Blanchette MD, MPH

The U.S. has focused attention on the rising costs of health care coincident with the increasing age of the population. Arguments have been made to overtly ration care to older persons; however, general acceptance of the need to ration scarce resources, whether or not such a policy is actually formalized, can lead to covert rationing. Some overt rationing has already occurred, some of the data put forth to justify that rationing needs to be challenged, and ethical principles need to be applied to provide appropriate and perhaps less costly care.

Given the temporal relationship between the increasing numbers of older people and the nation's attention to the costs of health care, it seems evident that aging is the major determinant of increasing costs. The image of demented oldsters avariciously consuming the legacy of our children springs to mind. An incomplete and biased recitation of health care statistics appears to support this conclusion, leading to serious proposals to ration health care for older people.[1] A careful examination of the facts begins with an acknowledgment of the potential for bias, the willingness to question what appears obvious, and searching beyond those data which serve to support a predetermined conclusion. Decisions about health care must be guided by objective information and by illustrating the ethical and moral principles to enlighten decisions about limits on the public money allocated for people of all ages.

In considering the costs of health care it is easy to be baited into an inter–generational contest, pitting the costs of providing increasingly sophisticated care to increasingly younger, potentially chronically impaired neonates, against the costs of caring for the nation's elders. Although the potential life expectancy of babies as a whole is much longer than that of elders, this is often not true when individual lives are compared. It is also possible to make the argument that elders may have contributed to the public good for many years and are now more deserving of care. However, basing decisions on whether an individual is deserving of care presupposes a wisdom that we may not have yet achieved and is to be strenuously avoided.

The use of public monies or health insurance being used for infertility treatment in a country concerned with overpopulation is certainly questionable. Our culture is one that cherishes children and childhood, at least in the abstract. We are most likely to accept the costs of raising a child and seldom stop to total up the costs of the years of dependency. Are we less likely to appreciate the personal fulfillment, redefinition of productivity and inter–generational significance of old age. The importance of completing psychological development and the rooting of successive generations by the presence of elders is undervalued.

However, in considering the allocation of resources it is futile and intellectually inadequate to pursue the avenues of intergenerational conflict. It should be evident that people's lives are priceless at any age. A fully developed society should be guided by principles equally valid across an age spectrum. A consideration of the allocation of resources requires that we examine the quality of the data, understand the age prejudice that exists in our culture, and be primarily guided by the ethical grounds for limiting care at any age.

Population Aging and Costs

Is there a primary cause-and-effect relationship between the rapid aging of the population and health care costs? People over age 65 today comprise about 12% of the U.S. population and account for one–third of the nation's annual federal health care expenditures, or $300 billion of an estimated $900 billion in 1993.[2] By 2020, when baby boomers will be in their mid to late 70s, the population over 65 is estimated to be 20%, with the actual number of people over 65 doubling from today.

However, when examined closely, less than 10% of the

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increased costs of health care can be accounted for by population aging.[2] Further, while it would appear that 12% of the population is using one–third of all public resources, state and local governments spend 10 times the amount on education and children's programs than are spent in programs benefiting elders, including Medicaid.[3]

Futility and Expensive Costs of Caring for the Dying

It has become a widespread belief that a majority of health care resources are spent on high technology care for elderly people in their last year of life. The facts show that medical costs in the last year of life for people aged 80 and older are less than for younger people. In 1989, 2,150,466 persons died in the U.S. Of these 29% were younger than 65, 22% were aged 65 to 74, 28% were aged 75 to 84, and 21% were aged 85 and older. In one study of 500 persons who died,[4] people over 80 had only half the hospital costs of those at younger ages, and costs for those age 65 to 79 were only slightly higher than for those under age 65. The beliefs about the costs of caring for the dying come from a series of papers[5-6] showing that about 30% of Medicare costs are spent on about 6% of people who die. However, only 6% of those who died had costs higher than $15,000, and in all age groups, a high proportion of costs are incurred for a small number of beneficiaries who are either sick enough to be at risk of dying or who are chronically ill. This is not an exclusive old-age phenomenon.[7]

There is also the argument that precious health care resources are squandered on demented elders who would be better off dead and that caring for older people is generally not only expensive, but futile.

Although the exact prevalence of dementia is still to be determined, it probably is present in 10% of people over age 65. It increases in prevalence with age, so that those over 85 estimated to have dementia, ranges between 30% to 50%. Conversely, then from 50% to 70% of people over age 85 are not demented. Even in those who have dementia, with forgetfulness and disorientation as prominent features, the quality of life can be quite acceptable with proper assistance. Those whose lives are more burdensome than pleasurable would be best served by providing care according to their self–determined wishes and advanced directives than by an external application of rationing standards. Although advanced directives, such as living wills, have been developed to further autonomy and privacy, early studies of costs are beginning to show a substantial savings without needing to impose rationing.[8]

If the costs of care is actually spread over an entire age spectrum, it still appears to be intuitive that there would be poorer outcomes of treatment in people of advanced age. Again, we see the value of hard data. In numerous studies of outcomes from surgical procedures and renal dialysis,[9] counter to intuition, chronological age drops out as an independent predictor of results of treatment. Outcomes are more closely tied to co–morbidities and functional status. Previous studies on the results of cancer treatment showing poorer outcomes in older patients have now been shown to be flawed by a systematic undertreatment of elders. Although age may be a marker for co–morbidity and poorer functional status, the results of these studies underline the need to assess individuals one–by–one for appropriateness of treatment and caution against an across–the–board age exclusion.

Overt Rationing

Despite the lack of data to support age–based rationing of care, it is common to hear or read comments about holding down health–care costs by overtly withholding high–tech, high–cost services for older people. There are no data to support chronological age as an independent criterion. There is also the concern that a limitation of high–tech care will lead to a limitation of all care, the *slippery-slope* phenomenon. Only a few months ago, British newspapers were focused on the story of a 73–year old man who refused physiotherapy for arthritis. Subsequently, the Royal College of Physicians published its study of equity care for the elderly. They declared, "there is no biological rationale for separating older people from the rest of the human race: They should get the same quality of care as anyone else." In both the U.S. in the 1960s and in Great Britain until the 1980s there is a history of people over age 45 being excluded from renal dialysis.[10] Subsequently, this age was gradually increased. In the early days of renal dialysis, in both places, with few resources to offer, an age bias was overt. It was assumed that older people would have a reduced life expectancy and derive less overall benefit from treatment. Subsequent information has shown that as a group, older people do have a shorter life expectancy in treatment, but after careful study, the Institute of Medicine Committee for the Study of the Medicare ERSD (End–Stage Renal Disease) Program[11] has specifically rejected age as a criterion for patient acceptance to dialysis, noting that co–morbidities and functional status are the primary predictors of benefits from treatment, not age. Data influencing the decision include, as predicted, that 1–year and 5–year survival of people on dialysis decreases with age. However, this is to be expected, since they note, older people on or off dialysis have a shorter life expectancy than younger people. In addition, the likelihood that intercurrent major medical events will occur is greater in the elderly, leading to a greater prevalence of older people voluntarily choosing to go off dialysis and dying from withdrawal of dialysis. However, whereas there is a reduced life expectancy, studies have shown that older people may value their continued lives on dialysis greater than younger people, with a higher well–being index, more positive feelings, and a greater life satisfaction in general, including being more satisfied with their marriages, family live, savings and investments, and standard of living.[12]

Covert Rationing

As carefully as we must defend against unwarranted overt age–based rationing, we must be ever more vigilant against covert rationing. Consider the following actual case:

A 75 year–old married man in overall good health except for mild emphysema chooses to be admitted to a long–term care facility with his wife who has severe, crippling arthritis and frail health. They have been married over 50 years and he would rather be admitted to a nursing home to be with her than remain at home alone. In addition, the nursing facility is run by a religious organization and offers the further opportunity to study and to live his faith and culture. While at the facility, he happens upon a friend receiving cardiopulmonary resuscitation. He is frightened by the event, and counseling him presents the opportunity to discuss advance directives. After careful consideration, with lots of questions asked and answered, he decides that his life is of high quality, that he wishes to received medical

intensive care if he should ever need it, but without chest compressions. Some time later, he suffers a relatively uncomplicated inferior myocardial infarction and is transferred to the hospital. He is expected to recover fully, but, because of the emphysema and some respiratory fatigue, it is decided to "rest him" for a short while with elective pulmonary intubation. He fully agrees to this plan with the stipulation that if weaning cannot be accomplished easily within a few days, that he not be allowed to remain on the ventilator indefinitely. According to hospital policy, the intensive care unit medical director, who does not know the patient, becomes the attending physician of record. The next day he is visited by his primary physician who finds him extubated, cyanotic, and near death, having been discharged from the intensive care unit. The following explanation is offered the primary physician by the unit resident trainee on duty the previous night who decided, without consultation, to extubate the patient. "Our society cannot afford to keep these elderly nursing home residents alive indefinitely. Besides, he's a "no code" patient, what's he doing in an ICU?" The patient died shortly thereafter, leaving a grieving wife who fully expected to have him back with her within a few weeks and a stunned family and primary physician who were not consulted in the ICU decision.

While there are many aspects to criticize about this case, among them the lack of supervision of the unit trainee, the lack of consultation with the family and primary physician, the main factor at work was age discrimination. In–depth discussion with this misinformed and dangerously unsupervised trainee revealed a person who was both lacking in judgment and profoundly influenced by the comments he heard and read about the cost and futility of health care in the elderly.

Covert actions to withdraw care are dangerous, must be anticipated and must result in policies to prevent such errors. Even more dangerous are the more covert, less dramatic, case–by–case decisions that erode options presented to older people. These may either be well–intended, based on the erroneous belief that they will fail to have an acceptable outcome, or related to an excessive concern for costs. There also is a growing concern that the pressure to tightly control costs in managed–care settings will result in the limited marketing of these plans to older people or stay the hand of care once these individuals are enrolled.

Privacy, Self–Determination, and Autonomy versus Utilitarianism

The concerns regarding costs and rationing are usually phrased in the context of the allocation of limited resources among individuals of a group. In cultures where the autonomy and rights of the individual are a strong priority, the discussion of allocation of resources is unsettling. In utilitarianism, the interest of an individual are secondary to the interests of the group. In some cultures, utilitarianism prevails and different decisions are made. Despite the current substantial percentage of the national resources allocated to health care, some would question whether we are near the actual limits of the resources. They raise the "guns vs butter" argument; comments such as "...the cost of stealth bombers" are heard. Given that the resources available for health care do have some reasonable limit and that we will fast approach it, the argument about allocation rages. The issue at hand is to control costs within an acceptable ethical and cultural framework.

There is every reason to believe that self–determination and autonomy can prevail while, at the same time, costs are reduced by focusing on providing the most appropriate care. This requires a careful assessment of individuals, their needs and probable outcomes of care, without financial or other incentives to provide more care. Promoting self–determination and autonomy while containing costs also requires a systematic way to encourage patients to understand and to choose the extent of care they desire, informed by the best available data.

Care should be appropriate, not rationed. Appropriate care requires that decisions to accept or reject care be truly informed with good facts, the tendency to an age bias be recognized and confronted, and advanced directives and health proxies or surrogate decision–makers be explained and recommended for adults of all ages. Health policy must be such that the possibility of overt or covert rationing to people of all ages who are at risk of needing high-cost care be acknowledged and avoided.

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Psychiatric Assessment of the Suicidal Terminally Ill

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Terminally ill patients who refuse life-supporting treatments and express a wish to die are often viewed in the same light as suicidal patients who are medically well. Terminally ill patients who are depressed should be treated with antidepressants, but if the wish to die persists, it should be respected.

Introduction

In the last few decades, advances in medical technology have benefited thousands of patients who years ago would not have survived late stages of illness. Unfortunately, these advances have created a new set of problems for the hospital staff, who then must face difficult decisions and choices not always in the best interest of the patient.

For example, patients with terminal illness who are admitted to the hospital for maintenance care or an urgent surgical procedure often present a major challenge to the medical staff when the patient refuses this treatment. The patient's motives for refusing treatment are often questioned and challenged by the treating team: The patient is using poor judgment or is clinically depressed. Refusal of treatment by the terminally ill can be interpreted as a suicide wish associated with clinical depression and therefore requires careful evaluation.[1] This evaluation is especially important because a patient's mood disorder can affect cognitive capacity.[2]

In some cases, functional depression does not preclude the need to respect the patient's autonomy and wish to die by refusing further treatment. However, clinicians generally believe that if the patient is suicidally depressed, treating the depression will eliminate the patient's wish to die because clinicians tend to view the suicide wish as similar to that in the medically well.

Informed Consent and the Problem of Competency in Medical Settings

In medical settings, legal competence to refuse lifesaving treatment is usually presumed, and the burden of proof rests on the physician to prove otherwise. Sometimes, the need for a given procedure or treatment can seem imperative to the medical team but meets with resistance from the patient. How is the refusal of treatment then to be managed? Is the patient's competence to make appropriate decisions affected by a mental or affective disorder? Or is it simply that the patient lacks sufficient knowledge to make such a decision? Or further, is the patient making a rational decision in his or her own terms to avoid further suffering in the face of a hopeless and terminal illness?

These questions have become especially important since courts and legislatures across the country have articulated a right to die for seriously ill medical patients. This right has been implemented both through case law and natural death acts. So far, no court has rejected outright the right to die.[3]

The doctrine of informed consent is rooted in the patient's right to privacy, self-determination, and the promotion of well-being; therefore, no doctor, nurse, or institution should impose treatment on a patient. For patients to exercise informed consent, they must know their diagnosis, the reasons for doing tests and procedures and their risks, the degree of accuracy of the tests (ie, percentages of false-negative or false-positive results), what information will be derived from them, and what kind of treatment is recommended (surgery, radiation, drugs) and its risks and benefits. They must also understand the seriousness of their condition or illness and the purpose of the treatment (curative or palliative).[4]

Degree of Patient's Understanding

Even when patients seem to understand all the information given, they can still refuse treatment. Further, the way the information is communicated can alter the patient's feelings and ultimate decision substantially. Another factor in a patient's ultimate decision for or against treatment is the physician's ethical bias and moral values expressed during the interview. Further, physicians have different tolerances for and abilities to discuss these issues with patients. For example, they may experience feelings ranging from emotional fatigue, fear of their own death, guilt, insecurity, or anxiety and could have various beliefs about the sanctity of life and the right to die.[5]

The difficulty lies in determining whether the patient has failed to understand the information, whether the patient has been unduly influenced for or against the treatment, or whether the patient's competence is impaired because of clinical depression.[6] Of course, the patient's values, religion, and cultural background may have a substantial role in the patient's understanding and interpretation of the information the physician provides.

Sometimes physicians believe they have to go to extremes to convince a patient to pursue treatment, especially when the patient's refusal and apparent wish to die are based on an erroneous interpretation of his or her condition. In these cases, the doctor's persistence in not accepting the patient's decision could be lifesaving.

The following case illustrates this point: A 45-year-old man

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diagnosed with colon cancer told his doctor he wanted nothing done to prolong his life. The doctor, convinced that the man's cancer was curable, called a renowned surgeon to confirm this, and then, finally, a former patient who had been operated on successfully for a similar type of cancer 10 years earlier. The patient was convinced and finally agreed to the surgery. However, if the patient had not known the doctor for many years, the doctor's behavior could have been interpreted as harassment.

Competency in Cases of Major Depression

Sometimes treatment refusal by the terminally ill is interpreted as a manifestation of underlying depression affecting the patient's judgment. According to Appelbaum and Roth,[6] this association is particularly difficult to evaluate because depression can masquerade as a rational, understandable reaction: "That's just the way I would think if it happened to me." In other words, patients can offer convincing and rational explanations for the choices they make.

Many clinicians believe the terminally ill patient who refuses treatment because of an underlying depression will later accept that treatment once the depression is treated with antidepressants or electroconvulsive therapy. However, a recent study[7] showed that most patients who make treatment choices through advance directives do not alter their views for as long as two years after writing the directives.

Such consistency is more clearly apparent in acquired immunodeficiency syndrome (AIDS) patients who are terminally ill. These patients present great challenges to physicians because of the challenge of determining whether their refusal of further treatment is a manifestation of suicidal depression or an expression of a well-thought desire to end their suffering. When patients refuse lifesaving treatments, psychiatrists are sometimes called to evaluate and persuade them to change their minds or to treat the depressive illness affecting their judgment.

Sullivan and Youngner investigated the legal and bioethical literature on competence to refuse treatment and the possible impact of depression on treatment refusal. They reported that the patient's capacity to make medical decisions is impaired because the depression is easily seen as a "reasonable response to a serious illness."[8]

Moreover, the depression distorts decision-making more subtly than delirium or psychosis. This effect means that patients with major depression retain the capacity to understand the risks and benefits of a medication but may reject its value for personal use.[9] In other words, depressed patients fail to recognize how medical facts and statistics apply to their individual situation.

In addition, the diagnosis of depression provides no definitive evidence that the patient's medical decision making is impaired. Presence of a major affective disorder may not always influence competence in making lifesaving decisions. The symptoms that satisfy the criteria for clinical depression in the *Diagnostic and Statistical Manual* (DSM-IV) are not necessarily the same symptoms that impair the ability to make lifesaving treatment decisions. For example, the diagnosis of depression may rely heavily on vegetative symptoms of insomnia and anorexia, which may certainly affect the patient's quality of life but would not necessarily impair the patient's competence in making medical decisions. Depressive symptoms affecting the decision-making capacity include distorted (negativistic) assessment of self, world, and future characteristics of depressive thinking.[10]

Other symptoms of depression can also seriously influence competence in making lifesaving decisions. For example, helplessness may result in underestimating the possible effectiveness of treatment of a serious illness. Feelings of guilt-and worthlessness can make the patient believe that suffering and death are deserved and should not be avoided. Anhedonia may make it impossible to visualize a cure and a new life which would make enduring any of the discomforts, pain, or indignity of medical illness worthwhile. Similarly, hopelessness may make visualizing a full life in the future difficult. All these cognitive symptoms can impair the patient's ability to make appropriate lifesaving treatment decisions even when the patient does not have a full-blown depressive disorder.

Depression in Terminally Ill Patients

A terminally ill patient may not expect much pleasure or realistically anticipate an attractive future given the reality of a terminal illness. Therefore, clinicians must realize that clinically depressed patients with a very poor medical prognosis may express a rational wish to die. "Depression can be diagnosed and treated in patients with serious medical illness. But after optimizing medical and psychiatric treatment and determining that the patient is competent to make medical decisions, it may be appropriate to honor the patient's desire to die."[9]

This dilemma is illustrated in the case of a 35-year-old man with HIV who had been diagnosed in 1986, treated with zidovudine since 1989, and had been hopsitalized 7 times. In a few weeks before admission for recurrent cytomegalovirus pneumonitis, his condition deteriorated steadily. Intubated when admitted and receiving oxygen by mask, he was gradually losing his sight because of cytomegalovirus retinitis in both eyes. He could not eat and was becoming cadaveric because of severe weight loss. The patient indicated that he did not want treatment of any kind, but maintenance care was nevertheless continued.

A psychiatric consultation revealed a diagnosis of major depression, and the patient showed mild improvement after a course of antidepressants. However, his refusal of further treatment and his desire to die did not change.

AIDS patients in the terminal stage often have few options. They are left with the prospect of a painful and undignified death, stigmatized by society, loneliness and helplessness in the final stages of the illness.[11] In this case, the patient's Living Will would only have helped stop or withdraw treatment if he had been unconscious. His desire to die was never honored during the final weeks so he endured the last 6 weeks of his life in agony. Further, the patient was too weak to consider suicide, and even then, without a lethal dose of medication, he would not have been able to terminate his life without violence.

Limitations of the Living Will

The Living Will applies only when the patient enters a comatose or persistent vegetative state. Sometimes the Living Will is rescinded verbally during hospital admission, and the patient's condition waxes and wanes and results in short spans of lucidity. This situation can further challenge the hospital staff, who must then determine what the patient really wants. Generally, adhering to the preferences expressed in the Living Will after a reasonable period of observation and repeated evaluation is best. In addition, maintenance care does not require informed consent.

Suicidal Ideation Versus Rational Request to Die

The diagnosis of depression in the medically ill is very difficult because several factors obscure the diagnostic criteria for depression. The diagnosis is complicated by an illness perceived as terminal and which engenders feelings that further treatment is futile.

The following factors should be considered in making the diagnosis of depression in a medically ill patient:

1) The depressive symptoms are often appropriate and a reaction to the stress of a serious illness, especially a potentially lethal one.

2) Many depressive symptoms are similar to those of the medical illness (fatigue, weakness, weight loss) and can wax and wane as the illness progresses.[12] Diagnostic criteria in the psychiatric nosology have been generally inadequate when applied to depressed, terminally ill patients.

3) Although recognized as a reliable predictor of suicide,[13] hopelessness is not necessarily pathologic in terminally ill patients. A patient's realistic appraisal of his or her condition and refusal of life-supporting measures may be the last attempt to retain control.

Vegetative signs and symptoms were omitted from the tables because symptoms of fatigue, weakness, insomnia, anorexia, and weight loss can occur in suicidally depressed patients as well as in terminal, depressed patients and therefore have no distinguishing value. (Table 1, 2)

Because of considerable overlap between psychologic and biologic processes in both the suicidally depressed patient and the depressed terminally ill patient, the best features for differentiating between these two groups of patients can be found in the social history, psychologic processes, and, specifically, underlying motives for the yearning for death.

When doubt exists, the depression should be treated with a course of antidepressants and the patient should be reevaluated. If the desire to die by refusing treatment is still present after the depression has lifted, this desire should be respected by stopping all aggressive treatment and maintenance care. The patient's wishes concerning life and death should take precedence and be respected even if they conflict with those of the staff. At that point, a helpful and wise approach would be to hold a staff meeting to understand the patient's problem and point of view and to promote consensus among all the caregivers and the family.

Table 1.—Psychosocial profile of suicidally depressed patients

Psychologic processes:
- orientation, coherence within normal limits
- spontaneity and affect present or absent
- mood depressed or agitated
- wish to harm oneself
- ambivalence
- internalized anger
- guilt and remorse
- shame
- pessimistic outlook on life
- wish for revenge
- poor self-image and low self-esteem
- hallucinations and delusions present or absent

History of losses:
- losses explained in terms of inadequacies or feeling victimized
- loss of prestige and status
- economic losses or extreme poverty
- loss of limb or severe disfigurement
- loss of a loved one by death, divorce, or abandonment
- loss of sexual capacity
- loss of capabilities from the infirmities of old age

Family history:
- family history of suicide attempts
- family history of alcohol or drug abuse or dependence

History:
- history of repeated suicide attempts when medically well
- history of dysfunctional relationships
- history of depressive episodes when medically well

Social history:
- poor communication with family members
- withdrawal from social relationships
- use of manipulative behavior
- lack of regard for other people's feelings
- major illness present or absent

Suicidal motivation:
- suicide seen in context of psychologic or interpersonal conflict
- method of suicide, considered or not
- thoughts of violent means of suicide such as jumping off a bridge or building, a car crash, or less violent means such as overdose often mentioned
- motivation for suicide often waxes and wanes

Comment

In the hospital setting, refusal of lifesaving treatment or a wish to die is often thought to be associated with major depression. This tendency is also true when the refusal occurs in a terminally ill patient. The best approach in these cases is to obtain a thorough social and psychiatric history. The attending physician may wish to obtain psychiatric consultation to determine not only the competence of the patient but also the basis for refusal of lifesaving treatment.

In cases in which depression seems to have a major role, giving the patient a course of antidepressant medication is wise. However, whenever the desire to die occurs in the absence of clinical depression and is clearly associated with the wish to avoid further suffering and indignity, respecting the patient's wishes is appropriate. In these cases, when the patient's wishes are

Table 2.—Psychosocial profile of terminally ill depressed patients

Psychologic processes:
- orientation, coherence within normal limits
- appropriate affect
- mood depressed or neutral
- psychotic trends absent
- feelings of being trapped by illness
- unwillingness to consider further experimental treatment or surgery
- concern about family's feelings and welfare
- worries about family's financial security
- fears about being a burden to spouse, family, and friends
- personal philosophy of living and dying sometimes expressed
- wishes to avoid further pain and suffering for the family
- bedsores, incontinence, nausea, and vomiting regarded as intolerable and demeaning
- concern over loss of dignity and self-respect
- no regrets about life achievements
- no feelings of guilt
- lack of moralistic or judgmental statements
- end-of-life decisions not felt to be immoral or wrong
- beliefs expressed about the importance of individual versus family well-being, the sanctity versus the dignity of life, the lack of real value in suffering
- Living Will consistent with the beliefs expressed
- patient's beliefs and preferences (when depression was not present) validated by family members

History of losses:
- past losses not associated with guilt, remorse, or resentment

History:
- history of psychiatric illness present or absent
- history of alcohol or drug dependence/abuse present or absent
- history of depressive episodes present or absent

History of present illness:
- terminal illness or incurable disease (amyotropic lateral sclerosis, acquired immunodeficiency syndrome, metastatic cancer)
- history of complicated medical treatment and lengthy illness
- history of intractable pain unrelieved by analgesic agents or surgery

Social history:
- past active and productive life
- warm and supportive relationships with family, children, and friends

Suicidal motivation:
- motive for refusing treatment based on wish to end the suffering
- feelings of futility linked to wanting to die
- death seen as a relief from suffering, indignity, and pain
- poor quality of life and poor prognosis mentioned
- religious guilt or inhibition in refusing further treatment not a factor
- refusal of treatment and request to die linked to terminal illness
- preference for physician aid in dying if it were available
- preference for nonviolent means of dying or even assistance with dying

ignored and aggressive life support is given, paradoxical suicidal ideation and behavior can develop.[14]

Clinicians also need to accept that some depression in the terminally ill is resistant to all antidepressant therapy. Knowing when to stop psychiatric treatment is just as important as knowing when to stop medical treatment and let the dying process proceed naturally. Providing relief with a course of benzodiazepine or narcotic agents may be the best treatment to offer to ease the pain and suffering of the terminally ill patient who refuses treatment that might prolong a painful life.

Conclusion

The need to die, as expressed by refusal of further lifesaving treatment in the context of a terminal illness, may or may not be associated with a psychiatric disorder. Clinical depression does occur and should be treated, but terminal patients may persist in refusing treatment and insist on dying. Their striving for a dignified death should be respected and honored. This attitude will help smooth what can be a very rough path for the dying.

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Medical Decisions at the End-of-Life: Lessons from America*

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Bioethical issues that deal with medical decisions at the end of life are as interesting as they are contentious. Daily, we confront questions of health care rationing, medical futility, euthanasia, or the use of advanced directives and ethics committees. There is present-day mainstream thinking on these bioethical themes and more important, under-emphasized and controversial aspects of dying in America.

Modern American bioethics originated in 1962 when Dr Belding Scribner developed the external vascular shunt that made renal dialysis possible. For the first time, patients otherwise doomed to die from renal failure could be treated effectively with hemodialysis. Because there were many more patients than dialysis machines, the University of Washington, where Dr Scribner worked, was forced to form an Admissions Committee to literally decide who would receive dialysis and live, and who would not and die. The seven anonymous lay members of the Committee—cynically dubbed the God Committee—dutifully selected candidates for the lifesaving procedure. Its methodology and criteria for choosing from among "prostitutes, playboys, and poets"[1] were largely unknown. This was America's first ethics committee at work.

American bioethics has matured much over the past 32 years, spurred in January 1980 by the formation of the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. The Commission studied medicolegal and ethical aspects of informed consent, brain death, human experimentation, access to care, and mental health. But its best known subject was medical treatment at life's end, which was authoritatively published in 1983 under the title "Deciding to Forgo Life-Sustaining Treatment: Ethical, Medical and Legal issues in Treatment Decisions."[2]

As a discipline, bioethics currently attracts more than 2,000 professionals who are drawn from the fields of medicine, law, theology, and the humanities. Bioethicists belong to societies such as the American Society of Law, Medicine and Ethics, and train at institutions like The Hastings Center in New York and The Kennedy Center for Bioethics in Washington DC. Leading medical publications and specialized ethics journals, eg, *The Hastings Center Report*, regularly feature scholarly research, analysis, and editorials on a broad array of ethical issues. And at a practical level, about half of all health care facilities across the nation have formed ethics committees to help them solve patient-care moral dilemmas.

American law, more so than philosophy, religion, or medicine, has helped shape the development of American bioethics.[3] Witness the proliferation of case-laws and statutes that attempt to define bioethical boundaries, beginning with the landmark case of *In re Quinlan*[4] decided in 1976 by the New Jersey Supreme Court. For the first time, a court of law was asked to rule on whether a patient in a persistently vegetative state could refuse mechanical ventilation, even if such refusal resulted in death. Calling it a privacy right that could be exercised on the patient's behalf by her parents, the court ruled that Karen Ann Quinlan's self-determination interest outweighed any real or theoretical opposing interests of her doctors, the hospital, and the State of New Jersey. The decision favored patient autonomy over medical paternalism; more significantly, it injected the law into a clinical arena previously within the exclusive domain of the medical profession.

Subsequent cases before the courts in states like California, Massachusetts, Florida, New York, and Missouri have continued the trend of deciding in favor of the family's wishes to withdraw life-sustaining medical treatment.[2,5] On June 26,1990, the U.S. Supreme Court decided its first right-to-die case in *Cruzan v. Director, Missouri Department of Health.*[6] Stating that "...a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment..." the court went on to characterize artificial fluids and nutrition as a form of medical treatment that could be refused. The *Cruzan* court also held that states may promulgate a standard that there be clear and convincing evidence of a patient's wishes before a surrogate decision-maker can authorize the withdrawal of life-sustaining treatment.

Legislation on patient care issues has also been intense in the past two decades. Virtually all states now have statutes on living wills, informed consent, durable powers of attorney, brain death, and assisted suicide. Federal laws also regulate health care decisions; examples are edicts governing the treatment of disabilities including AIDs and anti-dumping laws.

Of all bioethical issues, those that deal with end-of-life treatment decisions in the aged and the incurably ill generate the most debate. This is because they directly confront life-and-death outcomes, as well as issues of self-determination and health care cost.

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Living Wills

Patient self-determination is a bioethical principle of recent vintage, an outgrowth of American laws governing privacy or liberty rights. All competent persons are believed to have a fundamental right to control the decisions relating to their medical care. Autonomy underpins many widely accepted Western medical practices such as informed consent and do-not-resuscitate orders. It empowers the patient with the control of his or her body, even for decisions against medical advice.

When patients become seriously ill, they may become confused, delirious or comatose, and therefore incapable of making decisions regarding their treatment. Yet it is important to know their wishes, since some treatment options are invasive and expensive, and may only prolong the dying process while offering little or no reasonable chance of recovery. Patients may not want such treatment.

A living will is a written document prepared by an individual in order to direct future care in the event of medical decision-making incapacity. It is one way of preserving and respecting the patient's right of self-determination. All 50 states have statutes that allow individuals to plan in advance for their medical treatment: California was the first with the enactment of its Natural Death Act in 1976.[7] Hawaii passed its Living Will law in 1986, amending it in 1991.[8]

Living wills permit patients to forgo life-sustaining treatment when they become incurably ill and are no longer able to make or communicate their decisions. Patients may specify the refusal of specific measures such as mechanical ventilation, blood transfusions, dialysis or surgery, or they may choose to forgo all life-sustaining treatment. Medical personnel will always continue to provide comfort care to relieve pain and suffering. Written instructions in the form of a living will have two practical effects: They inform health care providers of the patient's true wishes, and they spare family members the uncertainty and guilt of trying to decide what's best for the patient. The underlying disease is allowed to run its natural course. "Allowing to die" is therefore different from active euthanasia or mercy killing, where a deliberate act is performed to extinguish life.

A living will is a witnessed legal document that becomes operational when the patient is decisionally incapacitated with a terminal illness. Doctors are legally obligated to abide by the patient's instructions; it may be revoked at anytime by the patient.

Three aspects of living wills that deserve attention:

• **Living will statutes may be unduly restrictive or vague.**—For example, "terminally ill" in one jurisdiction[8] was originally defined as death occurring in a "relatively short time." Physicians may not know what this means and have adopted the definition provided by Medicare the country's health plan for senior citizens, which is death occurring within 6 months. In some jurisdictions, persistently vegetative states and severe irreversible neurological damage do not qualify since these are not terminal conditions. Some laws do not address the withholding or withdrawing of intravenous hydration or tube feedings. For example, Hawaii, initially ambivalent about whether these measures constitute "medical treatment," excluded them from its 1986 law; an amendment in 1991 now permits the discontinuation of artificial hydration and nutrition in terminally ill patients, as well as in those with irreversible neurological conditions that impair decision-making.[8]

• **Durable power of attorney (DPA) is superior to a living will.**—A DPA for health care decisions confers legal authority regarding medical matters on someone (not necessarily an attorney) who is appointed by the principal (patient). This authority takes effect when the latter is decisionally incapacitated.[9] Appointing a DPA for health care is preferable to executing a living will because the patient now has a trusted surrogate who can faithfully reflect the patient's wishes known to him or her or are expressed in a concurrent living will. A living will alone is insufficient. It is a static document, made months or years prior, that cannot possibly anticipate every conceivable clinical situation that might arise in the future. For example, the patient may not have considered specific medical measures such as antibiotics, artificial nutrition or temporary dialysis. Or a new treatment may be imminent. Executing both a DPA and a living will gives the patient the best chance of fully exercising his or her self-determination rights when medically incompetent.[2] Together, the proxy-decision maker, the patient (speaking through his or her living will), and the doctor will decide what is best for the patient.

• **Educate patients and doctors.**—Despite widespread legislation on advance directives, most Americans have yet to execute such a document. The best estimates suggest that less than a quarter of the general population have prepared living wills. Doctors and nurses, who should know better, are no better off.[10] Inadequate public education and inertia in executing a legal document are the likely reasons. Recent federal legislation mandating all hospitals to inform patients of advance directive statutes should prove effective. Called the Patient Self-Determination Act,[11] the law went into effect in December 1991. Yet a study of 302 patients before and after implementation of the Act revealed no difference in patient knowledge. Only 6% were able to identify correctly the meaning and use of both a DPA and a living will, and less than a quarter remembered being given this information.[12] It seems a hospital is not the ideal place to begin the education process.

Living wills should be understandable and easy to prepare. Model forms should be widely available and should incorporate provisions for the appointment of a health care DPA. An effective educational strategy may be to encourage or require physicians to routinely discuss the subject with their patients before they become seriously ill. Special sensitivity is also needed in explaining advance directives to certain ethnic or religious groups. Blacks, for example, may shy away from advance directives for religious reasons or because of a perception of abuse by and distrust of the medical establishment.[13]

Ethics Committees

In the 1960s, some hospitals in the U.S. set up special committees to review decisions regarding abortions, renal dialysis, and human experimentation. Many of the decisions centered around the ethics of autonomy, rationing, or consent, so these early ad hoc groups can be considered the forerunners of our present-day ethics committees. In 1976, a New Jersey court recommended that family and physicians use a hospital ethics committee to resolve cases like *In re Quinlan* (the right to stop life-sustaining treatment) rather than seek judgment in court.[4] This unusual judicial recommendation, the first of its kind ever, provided the impetus for the creation of ethics committees across the country. The President's Commission's report in 1983 further encouraged their formation.[2]

In 1984, the federal government promulgated the Baby Doe rules to prevent the perceived maltreatment of handicapped neonates and infants.[14] The regulations failed to materialize into law, but they led to the proliferation of hospital infant care review committees, which in turn grew into hospital ethics committees.

About half of the 6,000 U.S. hospitals currently have working ethics committees; the percentage is higher in hospitals with more than 200 beds. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) deserves some of the credit for this phenomenal growth. In 1991 JCAHO, which accredits all U.S. health care institutions, wrote into its regulations the requirement that "an organization should have in place a mechanism for the consideration of ethical issues arising in the care of patients and to provide education to caregivers and patients on ethical issues in health care."[15]

In addition to ethics committees, hospitals are required by federal law to have in place Institutional Review Boards that scrutinize research protocols involving human subjects.[16] Finally, many professional organizations such as the American Academy of Pediatrics, the American College of Physicians, and the American College of Obstetrics and Gynecology have formed committees to establish ethical guidelines and policies for their specialties. The American Medical Association, the country's leading doctor organization, likewise has such a committee which regularly updates and publishes its position on ethical issues.[17]

What do hospital ethics committees do? Generally, they perform three functions: First, they influence policies on ethical issues governing patient-care. An example is the hospital DNR (do-not-resuscitate) policy. A current policy struggle of ethics committees concerns the formulation of a coherent approach to futile treatment. Second, ethics committees offer consultations to health care providers and families. These clinical consultations frequently involve difficult treatment decisions. Third, hospital ethics committees sponsor teaching programs to educate their staff and the public. The educational function is the least controversial of the three; some have suggested that it should be the only legitimate function of ethics committees.

The roles of the ethics committee should be clearly differentiated from those of hospital legal counsel and its risk manager.

Notwithstanding their popularity, hospital ethics committees have come under increasing fire for their lack of fairness, consistency, and effectiveness. It has been said that the main value of ethics committees lies in their process and not necessarily their product.[18] Critics also question the appropriateness of the move to immunize committee members and participants from legal liability.[19]

The most controversial aspect of hospital ethics committees is their role in clinical consultations:

• **Who sits on ethics committees?**—Most scholars are critical of committees composed mostly of doctors because of the concern that they alone cannot completely represent the patient's best interests. Doctor-controlled ethics committees are less common today; instead, committees almost universally have multidisciplinary and lay representation. It is important to have lay members, if only because they compel discussions at an everyday understandable level—the same level that is needed to meaningfully inform the patient and family. Nurses and social workers definitely belong on ethics committees, since they spend much time with patients and family, gaining special insight into patient wishes and concerns and family dynamics. Theologians, administrators and philosophers sometimes populate ethics committees; they can provide useful perspectives. One group appears unpopular: Legal counsel. Perhaps it's a reflection of paranoia over lawsuits and legal pronouncements, or simply the belief that the law sets mandatory standards, whereas ethics is aspirational.[3]

Ethics members may be ignorant of ethical principles and health care matters. A recent article decried the laissez-faire approach to ethics committees, and called for the systematic education and training of committee members in order to achieve standards aimed at raising the level of accountability.[18]

• **Who is an ethics consultant?**—Suppose a patient refuses a lifesaving blood transfusion. Family members are reluctant or unable to persuade the patient to change his or her mind. The attending physician is reluctant to coerce treatment and calls for an ethics consultation. Who can respond? Only doctors with training in clinical ethics? The chief of the department? What about a non-doctor ethicist or even the entire ethics committee if it can respond quickly enough?

Ethics consultants may review cases on behalf of the institution's ethics committee on which they serve, or they may offer these specific services without going through a committee. The main advantages of a consultant over a committee are: 1) first-hand direct contact with the patient, family, and health care givers; 2) quick response time; and 3) enhanced accountability. Adding a consultant to an ethics committee, therefore, can be expected to improve its effectiveness in case reviews.[20]

But what training qualifies an individual to be an ethics consultant? There is no U.S. statutory board of bioethics with the authority to certify an individual as a clinical bioethicist. A recent survey[21] asked 154 "ethics consultants" what they would recommend in eight hypothetical variations of the persistent vegetative state. The study revealed wide variations in their recommendations, pointing to the need for standardization. Other studies indicate that the medical fraternity is generally suspicious of non-doctors who make recommendations about their patients. Ethics consultants who are not medical doctors can expect, at least initially, to encounter resistance to their presence on hospital wards.

Finally, should an ethics consultant be paid for services rendered. Currently, most ethics consultations are offered as a hospital service without charge to the patient. Shouldn't the patient or health care insurance payers reimburse the cost of clinical ethics services just as they do for other clinical consultations?

• **Who has access to ethics committees?**—Ethics consultations should be patient-oriented rather than physician-oriented.[22] Ideally, patients and their families as well as all health care professionals connected with the case should be able to access the hospital ethics committee. However, in many hospitals, only members of the medical staff have access, and nurses and patients may be excluded. Because an ethical opinion may be sought where disagreement exists among doctors, nurses, and family, ethics committees should have an "Open door" policy to hear all sides of the issue. Patients and others will view committees that restrict access with suspicion, which in turn undermines their credibility and effectiveness.

• **Decisions by bureaucracy.**—Those bemoaning the increasing bureaucratization of medical decision-making cite ethics committees as one prime example. Dr Mark Siegler, a noted

clinical ethicist, has criticized decisions by committees because they add to the administrative and regulatory burdens on patients, families, and their physicians. Committees usurp the traditional role and responsibilities of the treating physician, replacing him or her with uninvolved moral experts who may have serious conflicts of interest such as minimizing hospital risk or allocating economic resources more efficiently.[23]

Another pitfall is that committees may paradoxically impair rather than improve decision-making. The phenomenon of "group think" may lead to subconscious pressure on members to reach consensus, and to minimize controversy, risks, and objections.[24]

Professor George Annas, arguably America's leading health care lawyer specializing in bioethics, is unenthusiastic about ethics committees for a different reason. He is concerned that a group decision by an ethics committee holds no individual responsible or legally accountable; ethics committees, he believes, should provide "ethical comfort, not ethical cover."[25]

Medical Futility

Consider patients in a persistently vegetative state, which is usually caused by prolonged interruption of brain oxygenation. Oblivious to their surroundings, such noncognitive patients stand no reasonable chance of returning to a sapient state. They require supportive treatment, sometimes needing mechanical ventilators to help them breathe. In the 70s and 80s, the issue was whether doctors could insist on treating such patients against the wishes of the family. In America today, the opposite issue confronts medical practitioners—the issue of medical futility.

If it is clear that families can stop treatment, is it also clear they can demand non-beneficial care against the doctor's medical judgment? Can doctors refuse to provide expensive futile care which neither treats nor palliates? Two recent court cases suggest there may indeed be such a duty to treat under certain circumstances. In the first case, *In re Wanglie,*[26] the New York court upheld the family's request to continue ventilator support of Helga Wanglie, an 86-year-old woman in a persistently vegetative state who had earlier stated her desire for all life-sustaining treatment. In the second case, *In the matter of Baby K*[27] the U.S. Court of Appeals affirmed a lower Virginia court's decision to honor a mother's request that her comatose anencephalic infant (born without a brain) be provided emergency treatment whenever she needed such treatment, instead of being allowed to die.

Because the evolving law appears to favor "pro-life" family decisions, physicians, fearing lawsuits, are understandably reluctant to reject surrogate demands for ineffective therapy. This largely explains the continued use of aggressive futile treatment in hospital wards and intensive care units. Extending, *ad absurdem,* this putative duty to treat, doctors even go so far as to offer options that are clearly unwarranted, eg, cardiopulmonary resuscitation for the patient with terminal cancer. It's a misreading of the law of informed consent, and an example of defensive medicine which, by one estimate, adds $27 billion to annual U.S. health costs.[28]

Might judges be off the mark in their opinions regarding medical futility? The goals of medical practice are to prevent illness, to restore health, to alleviate pain and suffering, and to rehabilitate. These goals are only served by doing what is medically appropriate or indicated. If futile care equals inappropriate care, a family's misplaced demand for such treatment must necessarily yield to medical judgment. Judges and families should defer legitimate clinical decisions to the medical profession. Doctors are bound by the Hippocratic Oath and are trained to make sound clinical judgments. They define the standard of care, and they should stand by it.[3] This is feasible because:

• **Medical futility is definable.**—Simply put, futile treatment is that which cannot reasonably be expected to improve a patient's quality of life. Under this definition, comfort care, which relieves suffering, is *never* futile. On the other hand, cardiopulmonary resuscitation in a comatose terminally ill patient is.

Schneiderman and colleagues[29] have proposed several definitions of medical futility that are practical and useful. They believe physicians should differentiate between treatment that merely results in an isolated effect from that which brings about a general benefit to the patient as a whole. Treatment that fails to provide the general benefit, whether or not it achieves a physiological effect, is futile. Treatment that merely preserves permanent unconsciousness or condemns the patient to existence in the intensive care unit can also be considered futile.

Some insist that for treatment to be deemed futile, it must offer zero chance of a favorable outcome. A more practical approach is to acknowledge that absolute certainty is unachievable in medical prognosis and to accept a no-reasonable-possibility standard. Schneidemman et al offer a quantitative definition of medical futility: Less than one chance in 100.

• **One way to save medical costs—accept death?**—Medical expenses are apt to be particularly high at the end of life. About 30% of all Medicare payments each year are for the 5% of beneficiaries who died in that year; about 40% of the medical bill in the last year of life is spent in the last month.[30] It has been suggested that a good part of these expenditures may be for futile invasive treatment rather than for comfort and compassionate care, a perversion of high-touch by high-tech.

Because physicians can never be certain whether or when death will occur, some commentators have challenged the view that these end-of-life expenses are unnecessary or wasteful. They calculate that relatively little savings will result even if we take positive steps like advance directives, hospice care, and the elimination of futile treatment.[31]

Rationing

Most wealthy nations spend 7% to 9% of their GDP on health care. By contrast, the U.S. leads the world by consuming 14%, or nearly $1 trillion. Neonatal care in the intensive care unit can cost upward of $2,000 a day. Major medical procedures such as coronary bypass surgery top $20,000, and organ transplants cost even more; when follow-up care and medications are totaled, the bill exceeds $100,000.

Mired in this milieu of medical megabucks are 37 million Americans, a quarter of them children, who cannot afford health insurance and therefore forgo ready access to health care. Prenatal care is patchy, and many children are not properly vaccinated. These factors largely account for our high infant mortality rate of 9.2 per 1,000. In contrast, Singapore boasts a figure of 5.5, Canada 7.2, and the U.K. 8.4. Our life expectancy, at 75.2 years, trails Canada's 76.4, Singapore's 75.7, and the U.K.'s 75.6.[32]

Even in a crisis of affordability, no caring society can allow its sick to go without medical attention. Ethically we must insist on universal access. Yet America does not wish to surrender its lead in biotechnology, medical innovations and quality care. The

trick is to satisfy these needs within an affordable health care budget, to structure a system that delivers all three: Quality, accessibility, and affordability. Can health care ever be like the good, fast, and cheap McDonald's hamburger? Or do we believe those who tell us that health care, for better or for worse, can only serve up any two, but never all three?

Enter rationing. Many consider this morally indefensible, forgetting that we already ration care by implicitly limiting the reach of 37 million uninsured Americans. Under one scenario, the new rationing will provide coverage irrespective of the ability to pay, but what is provided will be basic and adequate, not comprehensive. Those who want more will have to pay for the extras themselves. Adequate care does not translate into everything with the slightest hope of medical benefit. As in the family budget, affordability dictates what we might have to do without.

Is providing such a basic package to all, but allowing the individual to buy additional coverage, ethically justifiable? This is two-tiered medicine. It favors the rich, and it is practiced in most countries of the world. We in the U.S. so far have resisted its implementation, but the current health care debate centering on affordability is forcing us to reconsider the issue. Should money buy a second or third opinion, the best available surgeon, a private nurse? Surely there are limits. Should it ever be allowed to buy a kidney?

What will the law say about attempts to limit care in the name of saving money? In America's litigious society, we can expect lawsuits to proliferate. *Newsweek* recently described lawsuits as the "weapon of choice" against those who would limit medical services.[33] This past year, Nelene Fox successfully sued Health-Net, an HMO, for its denial of a bone-marrow transplant to treat her breast cancer. Ignoring defense evidence that such treatment was experimental, the jury awarded her $89 million in damages.[33]

Another recent case provides a useful perspective on the subject of rationing. In the summer of 1993, a pair of Siamese twins were born to the Lakebergs. The twin sisters, Amy and Angela, shared a common heart and liver. In an urgent and desperate operation, surgeons in Philadelphia attempted to separate the joined organs. They were prepared to sacrifice Amy for the infinitesimal chance of saving her sister Angela. Unfortunately both died. The cost of the tragedy was estimated at $1.3 million.[33]

In caring for its poor and its uninsured, Oregon recently set up a list of 696 diagnoses and procedures ranked in order of medical priority. The state legislature funded up to number 565, and excluded items such as heroic treatments for the incurably ill and most types of plastic surgery. Although not without its critics, the courageous and realistic Oregon Plan has received approval from Washington after being previously spurned by the Bush Administration. The nation will be watching closely whether Oregon's rationing scheme proves to be a workable model of cost-containment in health care delivery.[34]

• **Age as a criterion for rationing.**—Several leading philosophers in the U.S. have proposed that age be used as a criterion in the rationing of medical care, reasoning that such limits are justifiable because each citizen would benefit over the course of the individual's lifetime (every citizen was once young). Thus, age discrimination differs fundamentally from sex or race discrimination since these latter classes would be denied from birth an equitable share of health care resources. Callahan[35] in particular has made the point that citizens should substitute "communalism for individualism," and accept death at the end of a natural life span both for their own sake and for the sake of others. Extending the logic of his argument, he has called for the cessation of medical research directed at extending life.

The fascination with using age as a criterion follows the dramatic demographics of aging in the U.S. and elsewhere. Currently, those over the age of 65 comprise 12% of America's population; this figure will rise to 20% by the year 2020. The elderly consume a disproportionate share, almost a third, of health care spending.[36-37] And, in contrast to Asian values,[38] American attitudes tend to glorify youth and devalue the elderly.

It is not always clear whether these philosophers are talking about limiting routine medical care, intensive care, or futile treatment of the elderly. Few would wish to limit routine, comfort and compassionate care for any patient, young or old. On the other hand, it is easy to argue that medical treatment that extends life devoid of human qualities should not be undertaken. But that argument applies irrespective of age.[39]

The matter of limiting intensive care for the elderly is probably what's being contemplated. It deserves closer study. Recent data indicate that the long-term outcomes of hospitalized critically ill elderly patients are remarkably good.[40] Compared to a control group (ages 65 to 74), elderly patients 75 years or more did not differ in length of hospital stay, hospital charges, mortality at 1 year, or quality of life. Most were willing to receive intensive care again, if necessary. Such results have prompted a call for re-examining the common assumptions about health care in the elderly.[37]

Limiting elderly health care is assumed to result in substantial savings. Levinsky has questioned this conventional wisdom,[39] high cost hospital admissions account for less than 3.5% of Medicare expenditures; the withholding of all routine medical care from the elderly is believed to be necessary before substantial savings can be achieved. Restricting research that extends the natural life-span has been criticized as naive, since research cannot be compartmentalized (the example is given that penicillin prevents rheumatic fever in the young and extends the lives of the elderly with pneumonia). Finally, Levinsky argues that the noneconomic costs of a national policy to limit health care to the elderly would be substantial, since it is politically unpopular and is likely to exacerbate the tension between the generations.

Euthanasia

More than any other controversy in health care, euthanasia palpably confronts the life-and-death decision. It ranks as one of America's premier ethical dilemmas, and its most emotional.

Supporters of euthanasia assert an individual has the ultimate right to choose death, and there is no moral difference between allowing a person to die, which is legal, and active euthanasia, which is not.[41] They point to the medical profession's insensitivity toward alleviating pain and suffering at the end-of-life as the raison d'etre in their demand for death control and death with dignity.

Opponents of euthanasia deny such an absolute right to be killed: Allowing the underlying disease to take its course is fundamentally different from an overt act whose purpose is to extinguish life.[42] They also argue that life is sacred and that hospice care and better doctor education have resulted in improved comfort measures for the terminally ill.

• **The slippery-slope argument.**—Many fear that legalizing euthanasia may unintentionally victimize the weaker members of society. What begins as allowing free choice would slide into subtle encouragement to end life; mental coercion and involuntary euthanasia without explicit patient requests lie short steps away. The handicapped, the poor and the aged would be the most vulnerable. A review of MDEL (medical decisions concerning the end of life) in the Netherlands, where euthanasia is condoned, supports this slippery-slope argument.[43] The lack of explicit request was found in 1,000 patients who were euthanized in 1990 to 1991. Such abuse concerns led to the narrow 54 to 46 rejection of recent *aid-in-dying* initiatives in Washington and California.[44]

The euthanasia assault on the Hippocratic Oath argues ill for American society plagued by family rupture, mindless violence, and increasing discrimination. While claiming to be autonomy-centered, active euthanasia stands to dangerously expand the ethical boundaries of rationing and medical futility.

• **The double-effect phenomenon.**—Aggressive treatment toward abating pain and suffering at life's end may result in an earlier death for the patient, since medications such as morphine are powerful respiratory depressants. This unintended result of accelerating the dying process is not wholly unanticipated. Doctors, therefore, worry about the wrongfulness of this so-called "double-effect" phenomenon. Physician fear of criminal or civil backlash may be the basis for the dramatic under-use of narcotics (both dose and frequency) to alleviate the suffering of the dying patient. It has been estimated that in as many as 80% of patients, pain is not relieved effectively.[45]

Bioethicists have universally considered the morally supportable double-effect phenomenon to be fundamentally different from euthanasia or physician-assisted suicide. Their reassurance may not be enough. Laws immunizing physicians from liability in this area may be necessary to gain the confidence and support of an increasingly skeptical profession. A change in physician mind-set toward the double-effect phenomenon will ensure better comfort care in terminally ill patients.

• **Is legalized euthanasia likely?**—Like the abortion fight culminating in *Roe v. Wade*[46] more than two decades ago, the euthanasia battle is being waged with increasing stridor and cacophony. The country appears intensely interested and evenly divided on this issue. A how-to monograph on suicide entitled *Final Exit* became a runaway best-seller.[47] And a survey of 938 physicians in Washington revealed that a slight majority favored legalizing physician-assisted suicide and euthanasia in at least some situations, although most would be unwilling to participate in these practices themselves.[48]

The recent court verdict absolving Dr Jack Kevorkian, a pathologist who assisted in the mercy-killing of 18 patients in Michigan, will fuel the national drive to legalize euthanasia. Initial rebuffs at the ballot box in California and Washington notwithstanding, pro-choice advocates can be expected to redouble their efforts to achieve their goal. This November, Oregonians will be voting on an aid-in-dying initiative that sanctions the request for drugs to end life. Liberal Oregon supports legalized rationing, and it is home to The Hemlock Society, the nation's leading right-to-die organization. Early betting favors passage of this initiative. If passed into law, this initial victory for supporters of legalized euthanasia will serve as a powerful catalyst for the passage of similar laws across the country.**

Conclusions

My personal experiences and my reading of the bioethical and medicolegal trends in America lead me to offer the following overview:

1. America should be applauded for its insistence on respect for patient autonomy, but it should be more willing to accommodate physician paternalism. Most of all, it must recognize when autonomy ought to yield to societal values that preserve the common good.
2. Lawyers and the courts are overly intrusive in patient-care matters. Like Damocles' sword, the law hangs over the heads of health care providers, frequently impeding rather than fostering their efforts to look after the best interests of their patients.
3. Doctors must not abdicate their duty and privilege as the patient's ultimate advocate.
4. The health care crisis in America is one of affordability rather than access. To preserve the excellence of our health care system, we simply must restore self-discipline and spend within our health care budget.
5. Equal comprehensive health care for all is an illusion, even if it is politically correct. But we must insist on basic adequate coverage for all, irrespective of age or the ability to pay.
6. Futile treatment confers no benefit on patients, and wastes health care dollars. It should be abandoned.
7. Overall patient and societal benefit should inform and guide the decision to treat, to withhold treatment, and to allocate scarce health care resources.

**On November 8, 1994, voters in Oregon enacted Measure 16 that legalizes the prescribing of medications for terminally ill patients seeking to end their lives.

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Commentary

Have Physicians Abdicated Their Role?

Steven S. Moser MD

Despite enactment of progressive living will legislation in Hawaii and elsewhere, it is evident that the percentage of patients who have signed living wills has not increased significantly in the ensuing years. The reasons for this are many, but most of the blame can be laid on practicing physicians who have been unable to raise and pursue this delicate subject with their individual patients.[1-2]

The extensive mandated living will questionnaires required of hospital admitting offices in order to admit patients are more burdensome than helpful: They merely document the existence or nonexistence of a living will, but do not encourage patients to consider signing one, thereby adding to the already onerous paperwork required for admission. Even if they were so encouraged, elderly patients in the throes of life-threatening illnesses are usually in no condition to give the necessary thought required to make this critical determination on short notice in a tumultuous environment.

As a result of the failure of these well-meant legal attempts to deal with medical futility, we find ourselves still in the dilemma of caring for terminally or catastrophically ill patients of advanced age in intensive care settings. We still spend billions a year of our dwindling medical dollars and resources on patients who should have been allowed to succumb peacefully to overwhelming diseases. Any one of us can walk into our critical units and find them filled with post-resuscitated 70 and 80 year olds on ventilators awaiting bypasses or dialysis or more cardioversions before they die.

Despite the ample literature on medical futility in these settings, it has become almost passe´ to think about, let alone discuss, this catastrophe of technologically induced agony, which sometimes borders on torture. As physicians, we know that the vast majority of patients will never survive in any meaningful way after our *interventions*, and yet we seem incapable of doing anything about it. We are all guilty of turning our heads, literally and figuratively.

Instead, our current practice is to rationally "discuss the code status" with the family, striving to explain to them in an even-handed, almost apologetic way, the intricacies of the case, and let them "think about it" and come to a "consensus." We leave what amounts to a clearly clinical decision entirely up to highly stressed family members who are not in any way knowledgeable in this scientifically complex area, let alone psychologically prepared to take on this grave moral responsibility. We do this ostensibly because we are fearful of legal repercussions if we do not offer *to do everything* to save the patient, even though we know that anything we do will be futile: unless we "cover ourselves," we could be sued.

We must ask whether or not we have abdicated our own field of expertise to lawyers, courts, administrators and the public. We remain silent in this area instead of exerting our considerable power as "experts" in the area of medical futility. It is my contention that the failure of legal means to satisfactorily address this problem throws the ball back into medicine's court. As medical professionals with a solid scientific rationale, we must empower ourselves to become more proactive in our care of the elderly.

Instead of going hat in hand to the family of the 82-year-old woman admitted to us with congestive heart failure and a massive stroke and asking them whether they want us to resuscitate her if her heart stops beating or she stops breathing, why can't we, as knowledgeable and caring physicians, tell them that we are doing everything for her that we can, but strongly suggest to them that in our medical opinion, *heroic measures* would be fruitless?

We can assure them that we will do everything in our power to prevent them from getting to that stage where such measures would be needed (mention intravenous fluids, antibiotics, blood thinners, oxygen, etc). But mustn't we also go on to say that if she does stop breathing or her heart stops, we do not think, in our clinical judgment (emphasis "in *my* experience"), that drastic measures such as chest compressions ("their bones are fragile and they almost always break when we do this"), cardioversion ("even if she's in deep coma, this is the one thing that she will definitely feel"), or intubation ("its very uncomfortable for her to have this large tube in her windpipe") or other painful, invasive procedures are *medically* warranted. "They won't help her in the long run, and they will make the short time that she survives an extremely painful and unpleasant experience just before she dies."

This graphic use of language is not cold, cruel, or manipulative, but is truthful and realistic. We do not need to mince words. We are painting a vivid picture for the family so they can understand more easily our reasoning for withholding futile and torturous applications of technology, which are not to be confused with medically useful and comfort-inducing therapies we have already told them (and can tell them again) we will give her. Such a proactive presentation sets the stage for the physician to say something like, "...and so with your permission, I'm going to tell the nurses to do everything for her but those very painful and invasive things that I have told you about, and if you have any questions (don't say *objections*), please let me know." After this presentation, very few family members are going to have the heartlessness or selfishness to demand that their mother or wife be a full code.

It is our prerogative as well as our responsibility to our elderly patients and society to make these decisions: We are the only ones who have the expertise. It is not paternalism, it is professionalism. Just as when we order antibiotics, IVs or dialysis, we are acting on our knowledge and experience to deliver the best care possible, which in this case is *primum non nocere*. We must start taking control of these clinical situations, for there appears to be no other remedies for the malady of medical futility on the horizon, and as we get better with our technology at suspending death, the problem will get worse.

In the past two years, I have found this proactive approach to obtaining no-code orders to be effective, humane, and acceptable to patients' families in almost all instances, and I have had almost no geriatric intensive care nightmares. The approach

must be individualized in each case and must be practiced, since it initially feels somewhat awkward for us to be speaking in this manner to patients' families. However, it is medically and ethically correct, and I find it a much more satisfying form of medical practice than performing as some sort of medical technician in the service of a legal system that has failed to solve the question of medical futility.

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Ethical Issues—Physicians and Managed Care

Stephen J. Wallach MD

Health care delivery, a long-standing cottage industry, has undergone change during the past five years. Large for-profit corporations have gained increasing market share in various parts of the country and Hawaii is not immune to this phenomenon. The payers of health care, business, labor and government have determined that costs have been escalating and management is absolutely essential for economic survival. As health care costs have risen and calls for more cost-conscious health care have been made, health insurers increasingly have adopted principles of managed care. There is no assurance that high levels of quality will be maintained. Some managed care programs have developed so that profit is the only motive and physicians have been forced to ratchet-down services. Some corporate heads have made large personal profits while decreasing patient care and physician reimbursement. Insurance companies have purchased physician practices or entered into very restrictive managed care contracts with physicians. A tremendous threat exists to the sanctity of the doctor-patient relationship.

Hawaii has a unique system because of the Pre-paid Health Insurance Act. Managed care has been in Hawaii for a long time. The competition between managed care and traditional fee for service has maintained high quality, and costs have been controlled, but the rise of medical inflation has not. Hawaii has large populations of Medicaid, Medicare, state and county employees, federal employees, hotel workers, large businesses, and labors unions. These large groups can be shifted into more restrictive managed care with relative ease. There is a concern that Hawaii will attract a ruthless Mainland-type of company seeking large market shares, significant penetration of the marketplace, and will be concerned only with the bottom line of profits without concern for quality of care.

Managed care plans use a number of techniques, some are directed at subscribers, some at physicians, by creating economies of scale, by coordinating care among physicians and hospitals, mandating the use of guidelines or parameters of care and establishing advanced information systems that provide an improved basis on which to measure quality and efficiency.

Managed care plans can constrain the costs of participating physicians' practices in several ways. The plan could restrict physicians from performing certain procedures, or from ordering certain medications or diagnostic tests. Managed care plans use programs of utilization review to detect what they consider unnecessarily costly practice patterns. Sometimes these programs become harassing, intimidating, and deceptive. They can encourage physicians to make cost-conscious treatment decisions through the use of financial incentives. Some plans pay bonuses to physicians, with the amount of the bonus increasing as the plan's expenditures for patient care decrease.

While efforts to contain costs are critical and many of the approaches of managed care have an impact, managed care can compromise the quality and integrity of the patient-physician relationship and reduce the quality of care received by patients. In particular, by creating conflicting loyalties for the physician, some of the managed care techniques can undermine the physician's fundamental obligation to serve as a patient advocate. Moreover, managed care can withhold appropriate diagnostic procedures or treatment modalities from the patient.

The Patient-Physician Relationship

The foundation of the doctor-patient relationship is based on the trust that physicians are dedicated first and foremost to serving the needs of their patients. It is trust that enables patients to communicate private information and to place their health and their lives in the hands of physicians. Patients trust that physicians will do everything in their power to help them. No other segment of the health system is charged with the responsibility of advocating for patients, and no other segment can be expected to reasonably assume the responsibility conscientiously. Physicians who care for patients directly are in the best position to know patients' interests and can advocate within the health care system for patients' needs.

Ethical Concerns

Ethical concerns with managed care arise because of at least two conflicting loyalties for the physician. First, physicians are expected to balance the interests of their patients with the interests of other patients. Second, managed care can place the needs of patients in conflict with the financial interests of the physicians. Managed care plans use bonuses and fee withholding to make physicians cost conscious. As a result, when physicians are deciding whether to order a test, they will recognize that it could have an adverse effect on their incomes.

Conflicts Among Patients

Some cost containment can be achieved by eliminating waste and improving efficiency. Cost containment is being achieved by limiting the availability of tests or procedures that offer only small or uncertain benefit, or that provide a likely benefit but at great expense. Because managed care plans generally work

within a limited budget and increasingly are for-profit companies that compete to report favorable results to shareholders, the cost of service will influence whether the service is offered to patients who might benefit from it. Allocation rules are developed by plans to deal with this issue.

Managed care plans can make these allocation decisions in a number of ways: By developing guidelines that determine for a physician when the service should be offered, by instructing physicians to provide medically necessary care, and delegating to the physicians the allocation decisions, or by some combination of allocation guidelines, physician discretion, and oversight.

Ethical Problems with Bedside Rationing

Physicians make cost benefit judgments every day as a part of their professional responsibility in treating patients. It is unethical to knowingly provide unnecessary care or to be wasteful in providing needed care. It has been demonstrated that even in an exclusively fee-for-service system, physicians overall respond to credible information about the effectiveness of their practices.

Allocation judgments about costs and services that approach a rationing decision or denial of a procedure that benefits a patient are not part of the physician's traditional role and, indeed, conflict with it. Although physicians have traditionally served as de facto gatekeepers to the health care system, overseeing the public's use of medical care, the cost primacy environment of managed care significantly complicates this.

The primary care physician's role in managed care illustrates the ethical problems associated with bedside rationing. The physician gatekeeper determines whether the patient will be granted further access to the health care system, including referrals to specialists and diagnostic tests. At the same time, the physician is required by rules and encouraged by incentives, to be aware of the overall financial limitations of the managed care entity for which he or she works. These competing concerns mean that a patient's further treatment depends not only on the physician's judgment about the legitimacy of the present medical need but also on the relative weight of that need in comparison with the organizational need to serve all patients and to control costs.

The physician is obligated to provide or recommend treatment when he or she believes that the treatment will materially benefit the patient, not to withhold treatment to preserve the plan's resources. It is imperative that physicians contribute their expertise to developing guidelines and advocating for the consideration of differences among patients.

Organization of Managed Care Structures

The American Medical Association recommends that managed care organizations establish a medical staff structure much like every hospital in the United States. The governing board of a managed care organization should have physician members as representatives of participating physicians. According to the Stark Law this cannot be more than 20% of the composition. There should be a medical board, completely comprised of physicians, responsible for review of quality of care, credentialing of physicians, and review of restriction of patient services. The governing board would be ultimately responsible for the activities of the managed care organization, but participating physicians would have formal mechanisms for input and responsibilities on crucial medical practice issues.

Patient's Role

In addition to the physician's role in making rationing decisions, there is an equally critical role for patients. The decision-making process should include some mechanism for taking into account the preferences and values of the people most directly affected. Accurate and full disclosure is most important.

Once guidelines and criteria are developed at the policy level, physicians are free to make clinical decisions based on those guidelines and criteria. In addition to the development of appropriate procedures for making allocation decisions, there are other steps that must be taken to protect patient welfare when the allocation procedures are implemented. With full understanding of the limitations affecting their treatment, patients will have the opportunity to make alternative arrangements for care that is not available in their health plan.

There are two important ways in which financial incentives to limit care compromise the physician's loyalty to patient care. First, physicians have an incentive to cut corners in their patient care by temporizing too long, eschewing extra diagnostic tests, or refraining from an expensive referral. Second, even in the absence of actual patient harm, the incentives may erode patient trust as patients wonder whether they are receiving all necessary care or are being denied care because of the physician's pecuniary concerns. Physicians should not participate in any plan that requires care below minimum professional standards.

Appeals Process

It is critical for managed care plans to have a well-structured appeals process through which physicians and patients can challenge the denial of a particular diagnostic test or therapeutic procedure. Such a process should afford the physician an opportunity to advocate on the patient's behalf before the plan's medical board or governing board. Managed care plans as institutions have an ethical responsibility to allow patients to challenge treatment decisions that directly affect their health and well-being.

Patients' Interests

Physicians must place patients' interests ahead of their own interests, including financial remuneration. Financial conflicts are inherent in the practice of medicine, regardless of the system of


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delivery. Generally physicians have been able to maintain their duty to patient welfare despite those conflicts. However, incentives to limit care are more problematic than measures to provide care.

Quality of Care

The most effective way to eliminate inappropriate conflicts is to create the use of financial incentives based on quality rather than quantity of services. Reimbursement that serves to promote a standard of appropriate behavior helps to maintain goals of professionalism.

Judgments about the quality of a physician's practice should reflect several measures.

1. It is essential to consider objective outcomes data, including data about mortality and morbidity, corrected for case load and severalty.
2. Because outcomes are often beyond a physician's control, it is important to consider the degree to which the physician adheres to practice guidelines or other standards of care.
3. Patient satisfaction should be considered.

Because measurements of quality are still in the rudimentary stages of development, it is important to ensure that other safeguards are in place to prevent abuse from incentives based on quantity of care. Reasonable limits should be placed on the extent to which a physician's ordering of services can affect his or her income. For example quantitative financial incentives should be calculated for groups of physicians rather than individuals.

Public Participation

Public participation in formulating benefits packages may resolve concerns of limited autonomy. Legislation reasonably protecting patients' rights to be informed and to choose, and protecting physician's rights to remain professionals, is also essential. Patients can exercise their autonomy by participating in the decisions of their health plan or in government processes that may restrict their choices or their benefits. In addition, patients have a responsibility to learn as much as they can about the choices of plans, including the exact nature of different benefit packages and their limitations. Patients have a responsibility to make sure they know and understand the terms of their own health plan.

Patient Autonomy and Responsibility

Patient autonomy does not guarantee the right to have all treatment choices funded. Some limits on personal freedom are inevitable in a society that tries to provide all of its members with adequate health care. Patient autonomy entails patient responsibility, including a responsibility to abide by societal decisions to conserve health care and to make an individual effort to use resources wisely and lead a healthy life-style.

Patient Advocacy

As patient advocates, physicians continue to have duties of disclosure and informed consent. They must ensure that all treatment alternatives regardless of cost are disclosed. They must also ensure that the managed care organization has fulfilled its obligation to disclose the terms of the benefits packages including all limitations and restrictions.

While physicians must remain patient advocates, patients do not have an unlimited claim to physicians' obligation to provide health care. Physicians should not manipulate or game the system in order to answer patients' demands. Any broad allocation guidelines should be established at the policy-making level so that physicians are not asked to engage in ad hoc bedside rationing.

There are ethical dilemmas that arise from managed care; safeguards must be built into the structure of the plan for the protection of the physician, patient, hospital and plan. The physician-patient relationship must be nurtured and preserved.

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Classified Notices

To place a classified notice:

HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.

Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

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Kaiser Permanente, Hawaii's oldest and well estab. managed care organization, is now expanding on the Big Island of Hawaii with clinics in Hilo and Waimea. Excellent opportunities available for BC/BE internist, pediatrician, ob/gyn, and several family practitioners. Also recruiting for internist at Maili Clinic on Oahu. Enjoy the advantages of group practice and concentrate on patient care w/out the business hassles. Applicant must have commitment to quality care. Competitive salary, comprehensive benefits package, malpractice coverage and profit sharing. Join us in *Caring For Hawaii's People Like Family.* Send CV to Joy Caminos, Hawaii Permanente Medical Group, 3288 Moanalua Road, Honolulu, HI 96819 or FAX (808) 834-3994. An Equal Opportunity Employer.

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News and Notes Henry N. Yokoyama MD

Life in These Parts

Shakespeare wrote: "All the world's a stage." His counterparts today write: "All the world's a bed."

(Paul Harvey on KHVH, March 1, 1995)

Talk radio celebrity Dr Laura Schlesinger listed such varied women's syndromes as PMS (Premenstrual syndrome); PCS (Post- coital syndrome); GCS (Glass-ceiling syndrome); TSS (Toilet-seat syndrome). "And these afflictions are growing at an astronomical rate. Without a more positive attitude, more and more syndromes will appear. Heaven forbid."

(KHVH, March 9, 1995)

The Governor's QUEST Idea and Its Detractors

When Governor Ben Cayetano suggested that the state Health QUEST plan be opened to state employees and retirees as well as private businesses, physicians cried foul. Andrew Don, HMA past president and current member of the Governor's Advisory Committee on Health QUEST said Cayetano's proposal was "really jumping the gun." Philip Hellreich, legislative chair of the Hawaii Federation of Physicians and Dentists, described the proposal as "awful." But HMSA Vice President for Community Affairs Fred Fortin thinks it's an idea worth exploring. So did Chris Pablo, manager of public, government and community affairs at Kaiser Permanente, who believes fee for service does not necessarily assure quality.

Andrew Don said, "Why didn't they come to talk to HMA and the physicians before proposing it. The whole nation jumped when Clinton tried to do this and it didn't work."

Philip Hellreich said the quality of health care under Cayetano's QUEST managed care plan will diminish because there will be a financial incentive *not* to make referrals to specialists.

Medical Claims Conciliation Panel

Toby Bailin, Executive Officer for MCCP, was the featured speaker at a KMC medical staff meeting on March 10. We gleaned the following gems from her delightful, yet educational session on malpractice claims.

Failure to diagnose cancer.—The bulk of malpractice claims revolves around the failure to diagnose cancer early, especially breast cancer. "The American public knows that mammograms diagnose early breast cancer."

Side effects of medications.—Attorneys consider the *PDR* as their *Bible*. Even strange side effects (occurring less than 1% of the time) can lead to malpractice suits, eg, convulsions.

Documentation.—"This has nothing to do with the practice of medicine. The greatest tool for a lawyer is documentation. So protect yourselves. Please document!"

Other tips.—"Lots of bad medicine will not be sued if you have a good personality. Being friendly may save months of litigation." A chiropractor's friendly relationship with a patient saved a surgeon from suit when he left an instrument in the patient's belly. "Beware when a young person dies," eg, from melanoma or accident, et al, for malpractice suits tend to result.

Humorous cases.—A woman sued when the physician left an electrical device during a Pap test.

Toby Bailin (who is neither lawyer nor physician) briefly summarized cases she has seen in her five years with the MCCP.

Medical practice claims by specialty:

- Allergy, neurology and rheumatology: No cases
- Cardiology: complications of coumadin-monitoring and angioplasty
- Cardiovascular surgery: surgical complications
- Dermatology: drug reactions and missed melanoma
- ENT: patient died after T&A
- Emergency physicians: Prolapsed retina in accident victim.
- FP & GP: Failure to refer; missed cancer
- Internal Medicine: missed cancer; drug complications
- Neurosurgery: No cases recently; wrong side of brain explored
- Pediatrics: SIDs cases
- Psychiatry: sexual misconduct; a paranoid patient sued because he was medicated
- Pathology: missed cancer diagnosis
- Urologist: penile implant went wrong
- Hospital: elderly patient fell enroute to the bathroom; injection caused numbness near the site.

We thank Toby Bailin for the highly informative session. She invited physicians to volunteer for the MCCP hearings as paid panelists. The MCCP is completely confidential and does not view the cases as a stigma against any health care provider. The health care providers covered are physicians, osteopaths, and podiatrists.

The MCCP has no jurisdiction over chiropractors, dentists, oral surgeons, psychologists and nursing homes.—HNY.

Rules to Live By from Shay Bintliff

1. Never judge a day by the weather.
2. The best things in life aren't things.
3. Tell the truth—there is less to remember.
4. Speak softly and wear a loud shirt.
5. Loosen up—the unaimed arrow never misses.
6. He who dies with the most toys still dies.
7. Age is relative—when you're over the hill, you pick up speed.
8. There are two ways to get rich—you can make more or you can require less.
9. What you look like doesn't matter—beauty is internal.
10. No rain—no rainbows.

(From *Changing Hawaii* by Diane Yukihiro Chang)

Sun Protection

Norm Goldstein offers his opinion on sun protection: (The Shoch Letter—The Voice of the Clinical Dermatologist Vol 45, Number 1 Jan '95 excerpts therefrom).

"Here in paradise we have a rainbow of skins from the whitest white to the blackest black and everything in between. We have had the opportunity to evaluate four different lines of ultraviolet protective garments. While most do offer good protection, the Sun Precaution line is the only one regulated and produced under FDA Medical Device Regulations. *Solumbra* has been extensively tested in vitro and in vivo, and withstands 100 launderings, extended exposure to UV, and still offers effective protection. I have a wide-brimmed hat (gift from the company) and also wear it on occasion. My political campaign motto: Goldstein for Governor—Hat in Hawaii! Aloha."

Condensed Exerpts from *Stitches* (Medical Humor, Journal of) Jan 1995

Religious Conviction

During a Monday morning clinic at the student health center, a young, single student came in inquiring about the "morning-after pill." She told me that her partner's condom had torn during intercourse. Completing her history, I found there were no contraindications for the sought-after pill. However, I'd also ascertained that she was already on the birth control pill and, in fact, she'd just finished her period. When I explained to the young woman that the morning-after pill was unnecessary, she thanked me and started to leave. As she reached the door, she turned back toward me and said, "Whew, I'm glad. I don't really believe in it anyway—I'm Roman Catholic!" (Jeff White in St John's)

A Children's Guide to Health by Jim Nelson

(A retired public school teacher in Missouri)

Examples of "Youngsterisms"—beguiling ideas kids toss around as effortlessly as frisbees. (More than 30 years of teaching has convinced me of this):

"Digestion is best done on an empty stomach."

"Chickenpox comes from petting you-know-what."

"Gymnastics exercises our outsides while genetics exercises our insides."

"There are cavities all through our bodies, but don't worry unless they get in our teeth."

"Health is just keeping well while hygiene is being clean about it."

"If you want to stay healthy, it is important to get your share of sleep and air."

"When people run around in circles, we no longer call them crazy. We call them joggers."

"Ancestors are important. Without them you probably would not have had a father or mother. Everyone ought to have an ancestor."

"Inside each ear they have found hammers, anvils and stirrups. So the ears have a good excuse to ache sometimes."

"Trunks are where we put our valuables. The human trunk has such valuables as stomachs and hearts."

"A local anesthetic is medicine given to you in your home town."

"An anecdote is a medicine we all have to take."

"One of the most painful of the minor injuries is the homegrown toenail."

"If anybody gets hit in the jocular vein, it can be fatal."

"Infantigo is one of the diseases of infanthood."

"Rats carry the blue-bonnet plague."

"Hoof-in-mouth disease is something orators get."

Laughter is the Best Medicine

A friend of mine in the accounting department of a small firm locates and pulls ledger cards for posting. Her job title is simply *puller*. One day her daughter reported that her second grade class had been discussing their parents' occupations. "Mommy," she said proudly, "the teacher was more interested in your job than anyone else's." My friend asked why. "I don't know," chirped the tot. "All I said was you were a pusher."

Jane Wesley

Conference Notes

Marcus Conant, Clinical Professor of Dermatology, UCSF Medical Center, lectured on "Dermatological Manifestations of HIV as Prognosticators of Disease Progression" at the Aug 14, 1994 QMC-UH Friday morning conference.

Introductory Comments

re Therapy: We need combined rather than mono-therapy.

re Vaccine: Chimps are protected. Asia has an 8-fold increase in HIV.

re Science: A. Cox looked at cell (Viral D).

How to Approach HIV

a. Early intervention
b. Combined therapy
c. Immune-stimulating drugs

re International HIV Convention in Yokohama

Disappointment, no vision, no international agenda on how to conquer HIV.

Problem: How to get FDA to allow combination therapy.

HIV Mortality

	1986 to 1987	1993
PCP*	50%-60%	0-10%
Kaposi	30%-40%	15%

*Pneumocytis carinii pneumonia

Reasons for increased survival:

a. Natural selection
b. Prophylaxis
c. Aggressive management
d. Patient empowerment
e. Antiviral therapy

Clinical Manifestations of HIV

1. Seborrheic dermatitis
2. Onychomycosis
3. Acne
4. Bullous impetigo
5. Herpes zoster
6. Candida
7. Molluscum contagiosa
8 Oral leukoplakia
9. Pruritus ani
10. Kaposi's sarcoma
11. Eosinophilic folliculitis
12. Bacillary angio

Dermatologic Prognosticators of Disease Progress

1. Seborrheic dermatitis
2. Onycholysis
3. Herpes zoster
4. Acne vulgaris
5. Bullous impetigo
6. Hairy leukoplakia
7. Monilia
8. Pruritus ani
9. Bacterial folliculitis
10. Molluscum contagiosa
11. Drug eruptions
12. Recalcitrant Herpes simplex

Vaccine: (3B=U.S. strain) Only 70% effective (no application to Japan, Kansas City, etc, but of practical use in San Francisco, with the highest incidence of HIV, eg, 3 AIDS deaths per day and 3 new HIV+ cases per day.)

How to approach a patient with Herpes zoster:

"Herpes zoster usually occurs in the 60s and 70s. It is usually associated with a depressed immune system from infection, stress, etc. Do you think we should test for HIV?"

Potpourri

A famed but particularly succinct psychiatrist was invited to speak on sex at an international conclave of psychiatrists. The amphitheater was packed. A hush fell over the crowd as he strode to the podium. He adjusted his glasses, sipped a bit of water; he then looked up and said in a firm, clear voice, "Gentlemen, it gives me great pleasure" and sat down."

(From Playboy Party Jokes)

Mental Health in General Practice

A Questionnaire (Adapted from *Prime-MD, Primary Care Evaluation of Mental Disorders*, copyright Pfizer, Inc.)

During the past month, have you often been bothered by (answer yes or no):

1. Stomach pain?
2. Back pain?
3. Pain in your arms, legs or joints (knees, hips, etc)?
4. Menstrual pain or problems?
5. Pain or problems during sexual intercourse?
6. Headaches?
7. Chest pains?
8. Dizziness?
9. Fainting spells?
10. Feeling your heart pound or race?
11. Shortness of breath?
12. Constipation, loose bowels or diarrhea?
13. Nausea, gas or indigestion?
14. Feeling tired or having low energy?
15. Trouble sleeping?
16. Thought that you have a serious undiagnosed disease?
17. Your eating being out of control?
18. Have little interest or pleasure in doing things?
19. Feeling down, depressed or hopeless?
20. Feeling nervous, anxious or on edge?
21. Worrying about a lot of different things?

During the Past Month

22. Have you had an anxiety attack (suddenly feeling fear or panic)?
23. Have you thought you should cut down on your drinking of alcohol?
24. Has anyone complained about your drinking?
25. Have you felt guilty or upset about your drinking?
26. Was there ever a single day in which you had five or more drinks of beer, wine or liquor?

Overall would you say your health is Excellent? Very Good? Good? Fair? Poor?

JAMA reports:

"There's a movement afoot to get primary-care physicians to recognize psychiatric disorders better:

a. Because most people with mental disorders never consult a psychiatrist.

b. And because as many as one in five patients who sees an internist or family physician suffers from a psychiatric disorder, but the problem is routinely not diagnosed or treated."

There are Two Little Magic Words

There are two little magic words
That will open every door with ease.
One little word is *thanks*
And the other little word is *please*.
You'd be surprised
What these two little words can do.
They worked like a charm for me,
And they'll work like a charm for you.

Author Unknown

Thank you, Grazie, Dankeschon, Gracias, Merci, Asante, Kansha suru, Spasi'bo.

From *A Book Of Thanks* by Helen Steiner Rice

We welcome any jokes or anecdotes from your friends or colleagues for possible publication in the News and Notes section of the *Hawaii Medical Journal*.—HY

The Weathervane Russell T. Stodd MD

Overdoing things is always harmful, especially when it comes to efficiency.

And then there were three. The original cataract PPO project selected six sites: one in Arizona, two in Texas, and three in Ohio. The goal is to save Medicare funds by bundling fees and negotiating a discounted price for cataract surgery. Innova Eye Medical Services of Cleveland is the third participant to drop out. The reasons given are that the anticipated increase in volume did not take place, and HCFA regulations on documentation, billing and promotion, proved oppressive. The plan originated with Gail Wilensky PhD, during the Bush administration, when the idea of bundling CABG procedures and cataract surgery seemed ripe for packaging. According to HCFA, the CABG project has accrued significant savings, but the same cannot be said for cataract surgery. The original plan, which was to be extended into "centers of excellence" by the Clinton plan, simply does not pertain to cataract surgery. The obvious truth is that prices for cataract surgery have been ratcheted down so low there is no longer much space for saving.

When economy dominates medical care, it can kill you.

The essence of managed care is that the plan will provide the most economical care without compromising quality. An illustration of the danger to patients in such distorted therapeutic ethics is embodied by the current lawsuit involving Copley Pharmaceutical's generic *albuterol,* which was substituted for the brand name anti-asthmatic, *Proventil.* It is alleged that a 10 year old who did well on Proventil became ill and died while on the generic. Many patients claim to have thrived on Proventil, but degenerated on albuterol. Copley has admitted finding bacterial contamination in their product and recalled the drug in January 1994. Of course, Copley's lawyers claim there is no proof that anyone has died from the drug, but told the court that the number of adverse-reaction reports may exceed 10,000! The FDA protocol called for three ingredients to kill bacteria, but Copley conceded that it never used two of the three. And that's managed care folks!

There are some people, if they don't know, you can't tell 'em.

A 64 year old diabetic was known to have high blood pressure, macular degeneration, and surgical aphakia. She suddenly lost vision in the right eye and visited her ophthalmologist. Examination of the optic fundus revealed a large pre-retinal hemorrhage involving the macula with vision limited to hand motion at one foot; the fellow eye retained vision of the 20/70-. The doctor obtained a fluorescein angiogram, explained the nature of the problem to the patient, and referred her to a retinal specialist. The latter surgeon also discussed the condition and possible complications before performing laser therapy on the left eye. Because the first physician had obtained a release, the retinal specialist did not document his explanation or obtain written consent. Mistake! Informed consent means the doctor who actually performs the procedure is primarily responsible for adequacy of the informed consent. When the patient developed a similar hemorrhage in the fellow eye three days after the laser procedure, the patient claimed that she was not aware such a thing could happen.

Don't overestimate the decency of the human race.

Shortly before dawn on a nearly deserted highway, a cardiologist was speeding to the hospital intensive care unit to implant a pacemaker in a patient who's heart rate had dropped to 20 beats a minute. An alert traffic officer arrested the doctor and cited him for driving 80 mph in a 55 mph zone. When the emergency was verified, the officer allowed the doctor to proceed, but issued the speeding ticket just the same. In court, the doctor admitted to the violation, but claimed that his haste was warranted, saying, "Conduct that is otherwise an offense may be justified by reason of necessity." The judge didn't buy that argument, fined the physician, and awarded two points against his license. The superior court and appellate court both supported the judge. The doctor has spent $5,000 in legal fees, but remains undaunted. "Some colleagues think I'm a fool, but I believe I'm right, and I'm willing to fight for my principles." Bonus to the doctor is that the case attracted wide attention, and his practice and professional respect have been enhanced.

The Bureaucracy never sleeps.

The Clinton health plan, sponsored by Hillary and Ira Magaziner, crashed on the rocks of an unresponsive Congress, but health care reform continues at the state level. Hawaii has Health QUEST, but that program is trivial compared to the sweeping legislation that established *Minnesota Care*. The bills delegated broad rule-making authority to the Commissioner of Health, and promised universal access, cost reduction, and a 2% tax on medical care providers. Moreover, the legislation created a virtual monopoly for HMOs by placing stringent regulations on traditional indemnity insurance plans. Prudential, Travelers Life, CHUB Life, and Nationwide have stopped selling insurance to small Minnesota companies. Health care delivery has suffered. The Mayo Clinic cut 450 jobs as a cost-cutting measure, and Minnesota has lost 500 doctors in the past two years.

Happiness makes up in height for what it lacks in length.

The Midwinter Seminar promoted by the Hawaii Ophthalmological Society was a great success. Outstanding faculty, fascinating clinical material, excellent hotel facilities and meals, generous and satisfied sponsors, and a concise but comfortable format. Accolades are due to John Drouilhet and his strong program team.

Addenda

- In 1945, there were 42 employees paying into the Social Security system for every one retiree. In 1995, the ratio is 3 to 1, and that fact alone is why Congress must address entitlements.
- A wedding is just like a funeral except that you can smell your own flowers.

Aloha and keep the faith—rts ■

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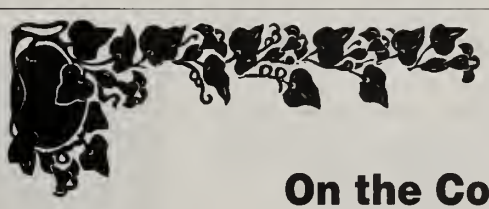
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Cover art and descriptive text by
Mr and Mrs Robert J. Perreira
Orchid Hybridizers, Kaneohe

On the Cover

Rodricidium Memoria J.I. Frederick Reppun MD, a newly hybridized orchid that is pending approval from the Registrar of the Royal Horticultural Society in London, England.

An intergeneric hybrid of *Oncidium Gypsy Beauty x Rodricidium Phyllus* to be named in honour of our doctor and very dear friend, one of Hawaii's most beloved and respected physicians who had devoted his entire life to the medical profession.

Editorial Norman Goldstein MD

Our special issue on Medicine, Law, and Bioethics, edited by S.Y. Tan MD, was our largest issue in 54 years! Not just the number of pages, but the content. Despite the paucity of advertisers for this issue, we published the entire issue. It is a classic—a *must-read issue,* cover to cover.

This Month

In addition to the papers by Joe Humphry MD and Cal Sia MD, Sharon Taba and Alix Howard-Jones, we collected two papers and a letter to the editor from our past editor Fred Reppun MD.

Dr Reppun submitted the manuscript, "From Prontolyn to Biaxin: The Half-century of Antibiotics" for our special issue on the History of Medicine in Hawaii (November 1995). Guest editors John Breinich and Al Morris suggested it be included in this issue. The Letter to the Editor—From the Past Editor was sent to me in February.

Fred's last manuscript, "The Physician as Patient..." was completed shortly before he died on March 15, 1995.

As you read Fred Reppun's writings, you will see what a truly great man we had as editor of the *Journal*—for not enough years.

Mahalo to Fred's daughter Martha Reppun Beachy for sharing some of her photographic memories with us.

And *Mahalo nui loa* to Bob and Susan Perreira, orchid hybridizers from Kaneohe, for their contribution to this Fred Reppun issue: The stunning photo of the J.I. Frederick Reppun MD orchid that graces our cover. This new orchid will be submitted to the Royal Horticultural Society in London, England, and registered as the *Rodricidium memoria* J.I. Frederick Reppun MD orchid. A real tribute to Fred.

Next Month

Robert Nordyke MD had been very busy working on a festschrift honoring the late Fred Gilbert. Because of the size of the issue and the difficulty obtaining permission to reprint many of the older articles, we had to delay its production. But, when you do read it, you will agree that Bob Nordyke and his assistants did a superb job with the festschrift.

Letter to the Editor



J. I. Frederick Reppun MD
HMJ Past Editor 1985-1993

The December 1994 issue of the *Journal* was an outstanding one. I spent an entire afternoon reading it word for word, cover to cover. It was the special issue on Hawaiian Medicine and Health. Its dedication to the memory of our very own *kanaka maoli,* George Hiilani Mills MD, makes it paramount that a copy be submitted to the American Medical Association, in the ranks of whose leadership George was prominent.

We are grateful to Bobbi Mills, his life-long consort and the mother of his children, for her intimate biography of her spouse. It reminded us of the time he ran for Lieutenant Governor of Hawaii, as a Republican forever, of course. Together, we walked door to door in the relatively small community of merchants in the Kaneohe of the time, to solicit their support for George's, and for Randolph Crossley's candidacy for Governor. We didn't win, but we might have won if the two candidates had reversed their roles.

Skipping through the issue and commenting briefly:

Eileen Herring's book reviews included that of *Whistler's Polynesian Herbal Medicine* with its beautiful illustrations in color. We would like to emphasize once again that it should be required reading by every JABSOM student of medicine prior to graduation, not to speak of every physician practicing in *Hawaii nei*. It not only speaks of medicinal plants, but reviews concisely the history of these islands.

The reprinting of George Mill's article from the October 1981 *Journal* was an editorial tour-de-force that made this issue so special. We wondered, however, that on page 337, under the sub-heading of Gerrit Judd and the Mosquito, whether there was an erratum—either in the original or in the present copy. It had always been our understanding that we do have the anopheles mosquito here in Hawaii, but not the plasmodium, hence the possibility of malaria.

The RCMI Program's piece on "Diabetes in Hawaiians" is an interesting example of the value of local research that can be published in *HMJ*. We wonder, however, whether the traditional concept of higher values of glucose intolerance, with aging, are no longer acceptable. We also wonder why the measurement of the incidence of the four major complications of diabetes: Peripheral neuropathy, retinopathy, cardiomyopathy and nephropathy, might be better criteria of ultimate morbidity, leveling the playing



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field between Hawaiians and non-Hawaiians. Incidentally, with respect to hypertension on page 364, where it was reported that "...38% of the known hypertensives were not taking...medications...", we were curious as to whether they were not complying with what had been prescribed, or whether they had never previously been prescribed anything for it, ie, did not know they were hypertensive. The distinction is important, because ethnicity may be a factor in compliance.

It was quite revealing to note that in Naleen Andrade MD et al's article on the difference between the approach to medical care by Hawaiians and non-Hawaiians, that there is no predilection by Hawaiians to seek non-traditional sources of care. We are critical, however, on three counts: 1) The role of their parents in affecting the choices by teenagers was not examined, 2) the fact that Native Hawaiians of the older generation often revert to traditional use of Hawaiian lore in addition to consulting western practitioners, therefore, inculcating the influence of both onto their offspring, was not assessed; and , 3) non-Hawaiians are too diverse in their ethnicity to be lumped together as a contrasting cohort.

It was indeed striking to note that in Nanette Judd's analysis of Native Hawaiian Traditional Healing, Papa Auwae "was instructed never to accept money for his services." Coincidentally, George Lundberg, Editor of *JAMA*, in a recent issue, deplored the loss of the traditional habit of charitable services by physicians. Lundberg needs to be reminded that many physicians are still charitable toward their patients, but that they resent mandated charity by Medicare, Medicaid, and insurance carriers to whom medical doctors do not feel the least bit charitable!

Nanette also reports that "before the chant was recited publicly, each word was examined for any harmful inner meaning. It was believed that the spoken word could bestow blessings, or perhaps a curse." This is a caveat for the modern western physician as well.

Another ancient caveat indicated by Nanette Judd is applicable to the nowadays: "The *Kahuna* code of ethics was to do only what one was trained to do. Therefore, referring a patient to another better trained, or more specially trained *Kahuna* was common practice."

Doug Massey MD et al report their study of the Hawaiian plant *mamane* as an example of the kind of research already going on. It shows promise of great value and, as he says, should be furthered.

The research by Patrick Aiu MD, a peripatetic voyager on the *Hokulea*, on medical care aboard the replica of the ancient Hawaiian seafarers' vessel that traversed thousands of miles of open Pacific ocean, reveals a bit of new and startling facts of great interest to those of us who inhabit this vast body of water. With reference to what he reveals about the incidence of flu-like illnesses during the first 3 weeks of voyaging, we pose the question: What about a short period of prophylaxis with antibiotics, say for 5 days before embarkation and for the first 5 days of the voyage?

Steve Moser MD's article on the Hawaiian Diet at Maui Memorial Hospital, a 3-week experiment early last year, opens the door to the perennial complaint of hospitalized patients: "...but, the food was terrible!" As a part of the armamentarium to promote a return to good health, why not, indeed, prescribe a

➤ *(Continued on Page 540)*

Medical School Hotline

The Role of Geriatrics in Medical Education at the University of Hawaii

Patricia Lanoie Blanchette MD, MPH
Professor of Medicine and Public Health
Director Geriatric Medicine Program
John A. Burns School of Medicine

Geriatric medicine is a critical-shortage specialty. Several nationwide studies emphasize the current and projected shortage of primary care physicians who are trained in geriatrics and consulting geriatricians to fill both academic and clinical service roles. The role the Geriatric Medicine Program (GMP) in the medical school is to respond to these needs and to provide educational resources and training in normal human aging, prevention of age-related diseases and disabilities, and in the medical care of older people. There are multiple roles, including: Helping every medical student and resident better understand the care of older people; training geriatricians who will provide care largely or exclusively to older people; advancing knowledge in aging; and providing service to our community.

It has been estimated that older people make up a third or more of the practice of family physicians and more than one-half that of internists. With the aging of the population, the practices of many specialists are increasingly filled with older people. This phenomenon has been recognized by the accrediting bodies of medical schools and residency programs; many now require a geriatrics curriculum for accreditation. Requests for training come from numerous departments, including internal medicine, family practice, psychiatry, ob-gyn, and surgery. The Institute of Medicine of the National Academy of Sciences recently issued a report recommending the equivalence of six months of training in geriatrics by 1996 and nine months by 1999 in the 36-month residency training program for internal medicine. While this recommendation is astonishing and few programs in the country have sufficient faculty in geriatrics to implement these changes, it is very likely that the spirit behind these recommendations will work itself into accreditation requirements in some form in the near future. In short, geriatric education is a *growth industry*.

Geriatrics is concerned with the overall well-being of older people in much the same way as pediatrics is concerned with both healthy development and medical care of children. It is the most interdisciplinary of specialties with care often provided by the geriatrician as a member of a team. Geriatrics is concerned with preventing diseases and disabilities that cause pain, suffering, and dependency in old age. Geriatricians are trained in the diagnosis and management of problems commonly seen in older patients: Subtle and atypical presentations of disease; multiple or complex problems; psychiatric and psychosocial problems among elders and their families; pharmacology and psychopharmacology; urologic and gynecologic problems; and rehabilitative and restorative problems. Geriatricians can work as primary care physicians or as specialty consultants. In keeping with its interdisciplinary nature, geriatrics is currently the only specialty in which a primary residency in either internal medicine or

family practice is acceptable as a prerequisite for entering an accredited fellowship program.

At JABSOM, the Geriatric Medicine Program began in 1984 as a school-wide program. It operates the Geriatric Education Center (GEC) at Kuakini Medical Center which provides continuing education programs, individualized training, and technical assistance for health professionals and graduate students from many different disciplines. The GEC also operates the Geriatric and Family Consultation Services (GFCS) providing comprehensive geriatric assessment and management while providing training opportunities for fellows, residents and students. The GECs region includes Hawaii and the Pacific, and thus is involved with a number of Neighbor Island and Pacific-based activities.

In the Department of Medicine, the GMP staffs the Division of Geriatric Medicine which provides one-month rotations in geriatrics for all internal medicine residents and two-year fellowships in geriatric medicine leading to certification in the specialty. First-year fellows rotate though the GFCS, the Teaching Nursing Home (TNH) program based at Kuakini, and the VA and Kaiser Geriatrics Programs. Second-year fellows are primarily involved in aging research, electives and inpatient consults. Fellows also take on a panel of geriatric patients whom they follow for the entire two-year fellowship. Fellows and residents see older patients in a variety of settings, including the hospital, outpatient clinic, nursing home, and the home. The fellowship program began in 1986 and to date it has graduated 18 new geriatricians with six fellows currently in training. The program now accepts four new fellows each year. For medical students, the faculty in geriatrics is involved with several units and serve as tutors, advisers, and clinical preceptors. The geriatrics faculty are assisting with operation and further development of the new Fellowship in general internal medicine.

Research in aging is also a major activity of the geriatrics program. Currently, there are several funded studies: Aging and Dementia in the Honolulu Heart Program; the Women's Health Initiative; The Diamond Head Macadamia Nut Nutrition Project, and several clinical trials for patients with Alzheimer's disease. The clinical trials provide Alzheimer's patients access to promising new medications not yet available on the market. The faculty is community-minded and frequently is tapped as guest speakers, committee members, and consultants to community agencies.

In short, geriatric education is strong and growing. At its core is a resolve to improve the lives of older people and their families in Hawaii.

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HMA President's Message

Frederick C. Holschuh MD

Diane and I just returned from experiencing some interesting contrasts: From the AMA leadership conference in Washington DC straight to the charter meeting of the Pacific Basin Medical Association in Pohnpei in the Federated States of Micronesia. I will describe the Micronesian meeting in an upcoming *Newsletter*. The AMA leadership conference in Washington DC will be outlined in the next *Newsletter,* but I wanted to stress the primary issue: The $250,000 cap on noneconomic damages (pain and suffering) in medical malpractice cases.

The U.S. House of Representatives passed this $250,000 cap as an amendment to product liability legislation. It now must make it through the U.S. Senate. Please read the material in the next *Newsletter* very carefully. I urge all of you to utilize the sample letter and ask Senators Akaka and Inouye to support this legislation.

If you are not an AMA member, please consider joining. We are all in this together.

I was very sad to learn of the passing of an old friend, Dr Fred Reppun. He was one of the first physicians I met when I began working in Castle Hospital's emergency room in 1971.

Dr Reppun will long be remembered for his service to the HMA, our *Journal*, his community, and his patients. When Fred Reppun had a criticism or suggestion, he always delivered it with a twinkle in his eye and some humor. All of us at HMA will miss him. I shall miss his friendship and support. Our best to his family. *Aloha* old friend.

Historical Notes

John A. Breinich
Executive Director
Hawaii Medical Library

In addition to all the other activities of J.I. Frederick Reppun MD mentioned in this tribute to him, he was also a man with a great interest in history, particularly in the history of medicine. He frequently added historical references in his writings and donated many medical artifacts and instruments to the Library and the historical room at The Queen's Medical Center. He was also an active member of the Hawaii Society for the History of Medicine and Public Health which meets monthly at Hawaii Medical Library during the academic year. He gave talks to this group and participated regularly in discussions until he was unable to attend meetings. The last paper he wrote, which is included in this issue of the *Journal,* shows his interest in and appreciation for history. We will miss him.

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HMA Council Highlights

April 7, 1995
Roger T. Kimura MD, Secretary

The HMA Council meeting was called to order by Dr Frederick C. Holschuh, President, at 5:40 p.m.

Present: Drs C. Lehman, President-elect, R. Kimura, Secretary; J. Spangler, Treasurer; A. Don, Immediate Past President; AMA Delegates C. Kam, R. Stodd, A. Kunimoto; Speaker L. Howard; Vice-Speaker H.K.W. Chinn; Component Society Presidents L. Sonoda Fogel for E. Bade, D. Canete, M. Joshi, T. Smith; Councilors: T. Wu, P. Chinn, S. Hundahl, M. Shirasu, J. Betwee, B. Shitamoto, P. Kim, C. Kadooka, A. Bairos; Past Presidents W. Chang, W. Dang, G. Goto, J. McDonnell, S. Wallach; Medical Student: Kelli-Ann Voloch; Young Physicians Delegate: C. Goto.

HMA staff: J. Won, J. Asato, J. Estioko, P. Kawamoto, B. Kendro, and A. Rogness, recording secretary.

Before Dr Holschuh began the business of the meeting, he asked Council for a moment of silence for Drs Frederick Reppun, Fred Gilbert, and Charlotte Florine who had recently passed away.

Dr Holschuh reported: 1) His business trip to Washington DC to attend the AMA meetings and meet the Members of Congress was quite interesting. The Cox-Geren Amendment to the Product Liability Bill which would set a cap of $250,000 for pain and suffering in all medical liability lawsuits was discussed at the session. The House of Representatives approved the amendment and it now goes to the Senate. 2) The original HMA Charter and Bylaws were used as the original Charter for the Micronesian Medical Association in the early 1970s. The medical association became inactive over the years and the Charter and Bylaws were lost. HMA recently faxed another copy of the Charter and Bylaws, and Dr Holschuh was invited by the Micronesian Medical Society to attend the Pacific Basin meeting representing the HMA.

For Action

1) Council voted to hold a managed care seminar, open to the HMA membership, with a small group meeting the night before, on the weekend of May 19.
2) Council agreed that the HMA should request MIEC and other malpractice insurers in the state to fund a professional part-time staff person for the Committee on Physicians' Health through a premium surcharge. The premium surcharge for each entity will be adjusted so that the total amount generated approximates the anticipated budgetary requirements of $85,000.
3) Council approved a Resolution (A-95) Human Rights Abuses in the Commonwealth of Northern Marianas to be presented to the AMA House of Delegates, and that HMA forward a copy of the Resolution to the United States Secretary of the Department of Interior, with a copy to the President of the United States, and Governor Benjamin Cayetano.
4) It was agreed that the HMA contact the management of the HMA building regarding the smoke-free status of the building; if the building is not smoke-free, they will be asked when they plan to comply with the directive that this building be smoke-free.
5) HMA will write a letter to the HMA Alliance to thank them for their efforts and thoughtfulness in promoting physicians on Doctors' Day and for the two-page newspaper spread, which was very impressive.

Component Society Reports

Honolulu.—Dr Canete reported: 1) Dr Canete also enjoyed the meeting in Washington DC. In particular the sessions on the different states forming IPAs; 2) the HCMS Executive Committee has been meeting every month at the Pacific Club for breakfast at each members' expense and not at the expense of the HCMS; 3) the VISION 2000 bill is still alive. The Hawaii Health Council meeting is scheduled for September 8 and 9; 4) the April HCMS *Bulletin* will release the new numbers from HMSA on the number of physicians in the state, where they are located, how many are in each specialty, and shows the loss of 89 doctors from last year; 5) the HCMS Executive Committee is planning to meet with the new HMSA leadership about issues that need to be discussed and to develop a closer relationship; 6) the Board of Governors is still in the process of restructuring, which should be completed in a couple of months.

Hawaii.—Dr Kadooka reported that Dr Bernard Fong made a presentation about Medicare documentation requirements at the last county meeting.

Maui.—Dr Joshi reported that a cardiologist came to talk to the county society in April about heart disease. Dr Schlesinger will give a talk in May, and a psychiatrist will speak in July.

West Hawaii.—Dr Smith reported that no meetings had been held, however, the county society is waiting to see what will happen in the legislature about the funding for hospitals. She reported that Kaiser is building two huge, full-service clinics on the Big Island.

For Information

Distinguished Medical Reporting Awards.—Dr Lehman reminded Council about the banquet and encouraged them to purchase tables. A list was distributed at the meeting of various large companies in the state.

Central Credential Verification Service (CCVS).—Discussion on such a service has been ongoing for two years. A number of physicians agree this should be a physician-run effort. HMA recently met with Queen's and Kuakini and submitted a proposal to them. They did not accept the proposal, and they are ready to proceed with a CCVS on their own. When Queen's and Kuakini submit their written proposal to HMA, Mr Won will report to Council.

HMA/PMAG.—The HMA representatives have been meeting with PMAG, although no contract has been developed as yet. Both parties agree: 1) The mission is to provide cost-effective, quality health care for the people of Hawaii and the Pacific Basin in a managed care environment; 2) The goals are to preserve the physician-patient relationship, assure quality and cost-effective medical care, provide a physician network option that is fair to all physicians on a statewide basis, and keep physicians in control of their practice of medicine. Dr Don will keep Council apprised of further developments.

QUEST I and II.—Dr Don reported that the new QUEST Director is Lynette Honbo MD, who is a pediatrician. The

QUEST I enrollment has increased to 130,000 and there are about 85 to 110 applicants a day. The QUEST Advisory Board is concerned about the cuts by the federal government and how this might affect the QUEST program. QUEST Phase II has been presented to the legislature and will include the aged, blind, and disabled to begin July, 1997. There are about 33,000 people in this category. HMA has completed its survey, however, the results are still being tabulated. Four hundred doctors responded to the survey and it appears the issues of most concern are: 1) The additional staff time required to comply with the QUEST program; 2) reimbursement and the large amount of claim rejections. Dr Don will provide updates in the *Newsletter* on further developments.

Expansion of AMA Hospital Medical Staff Section (HMSS).—The AMA plans to create another section called the Organized Medical Staff Section. The section would include physicians groups such as Kaiser, Straub, and IPAs as an Organized Medical Staff to have some input into organized medicine in a formalized way.

AMA/State Litigation Center.—The AMA and the state medical associations are investigating the possiblity of joining resources on legal issues. The funding would be $1 or $2 per AMA member. The center would not be a data bank but would be a way for all of the cases filed to be centralized so it would avoid duplication and physicians would have the AMA legal staff available for consultation.

Hawaii State Science and Engineering Fair.—Dr Lehman thanked Drs Cynthia Goto, John Spangler, and Virgil Jobe for serving as the judges. HMA presented a $1,000 *Kahuna Lapaau* Medical Science scholarship and prizes of $100, $75, $50 and $25, and the HCMS presented $100, $75, $50 and $25 to the junior category.

USP.—The USP is an organization created by physicians and it standardizes pharmaceutical products. It is a very reputable organization that has been expanding over the years. Dr Wallach is an HMA Delegate to the USP meeting held every five years. About seven years ago, the USP formed USPDI, drug evaluations and patient information material. The USPDI recently merged with the AMA Drug Evaluations which is a great combination of drug information. The products they are selling will be on-line; information on any drug interaction is available and can be printed for your patients. Dr Wallach will try to get samples sent to physicians so it can be marketed here.

Aloha United Way.—Dr Canete met with some CEOs who spoke on behalf of Aloha United Way. They informed him that physicians are one of the poorest contributors to the program. Dr Canete wanted it on record that doctors are not well thought of by the community as paying their fair share in Aloha United Way.

National Disciplining Board Report.—A report is printed every year and is a ranking of the number of disciplinary actions per licensees in a state. Because Hawaii was third on the last report, a reporter from AP in Washington wanted to know why. Ms Kendro reported maybe Hawaii doesn't have bad physicians. Hawaii has a very active peer review process and was one of the first states to require reporting of adverse peer review decisions. The Board of Medical Examiners takes its job seriously and has disciplined physicians. One error in the report by the Federation of Licensing: Hawaii has 3,465 actively practicing physicians, when in fact the number is around 2,400. Drs Holschuh and Wallach will write a response to this report.

Workers Compensation.—Dr Kam reported that in the last 10 years the fee schedule went up 60% and the total cost of health care went up 245%. That is four times more than the fee schedule, so the problem is not the fee schedule. There was only a 20% increase in claims in 10 years but a four times increase in health care. What is being heard at the hearings is that Hawaii should adopt the Oregon Plan. Oregon allows 12 treatments by an alternate health care practitioner for the first month. After the first month the patient goes to a medical doctor. The Oregon Plan is 40% above the median. Hawaii should push the Oregon plan plus the cost of living differential which is 15%. Dr Stodd reported that the Oregon Plan brought down the premiums by 40% in Oregon.

The meeting was adjourned at 8:50 pm.

Letter to the Editor from the Past Editor

➤ *(Continued from Page 536)*

healthful diet equally with a healing pill?

We readers have one complaint about the *HMJ* as exemplified in this article, but also in others. The tables are in such small print that we either have to find a magnifying glass or ignore reading them entirely. Editor, please note!

Bob Wong MD, finally retired ophthalmologist, complemented George Mills article and all the others, by an account of his many years of personal experience as a physician born, raised, and practicing in Hawaii, in his coda, "Hawaiian Medicine."

Henry Yokoyama's "News n' Notes" culminate Henry's 28th year of writing for his beloved *HMJ*—most readers read first in most every issue, from generalist to the subspecialist in the left eye only. Speaking of eyes, Russ Stodd's satire is also not ever to be missed.

To *HMJ*, its editors and its staff: A great issue!

Key Facts About Liability

American Medical Association

• The medical liability system costs nearly $50 billion a year, including $10 billion for physicians' and hospitals' liability premiums, $25 billion for defensive medicine and over $10 billion spent by other health care entities for their liability insurance.

• California's 1975 Medical Injury Compensation Reform Act (MICRA), which includes a $250,000 cap on noneconomic damages, has reduced premiums from the highest in the nation to well below average. Its overall health care costs also have stabilized.

• Physicians cannot expect to be effective or to maintain the special trust that is essential to the patient-physician relationship in a system where any patient encounter presents the threat of a lawsuit.

• Patients injured by negligence should be fully compensated for their medical and rehabilitation expenses, as well as lost wages.

• Injured patients receive only 43 cents of every liability dollar. Lawyers get most of what's left.

• Studies show that 60% to 75% of all liability claims have no merit and are settled with no compensation paid. This drives up premiums. Even in cases without merit, physicians often settle out of court to avoid the enormous expense and emotional trauma of a trial.

• Nearly 40% of physicians (78% of OB\GYNS) will have a claim made against them during their career, regardless of the quality of care they provide.

• One out of 8 obstetricians has stopped delivering babies—many because of the liability system.

• The number of medical malpractice cases nearly tripled from 1982 to 1992. The average liability payment has risen 108% since 1985.

• 71% of Americans support a cap on pain and suffering awards (according to a recent poll by the Health Care Liability Alliance.)



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–Keith Katano,
Group Administrator,
Medical Arts Clinic

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From Prontolyn to Biaxin: The Half-Century of Antibiotics

J.I. Frederick Reppun MD



A leather pill kit made in 1954 at Molokai Ranch for Dr J.I.F. Reppun. The inscriptions read, "1954, Molokai, Gift of J.D. Fitzgerald, Mgr., Molokai Ranch" and "Dr J.I.F. Reppun, Kaneohe." (Photo courtesy of Hawaii Medical Library.)

I was in my third year at Harvard Medical School in 1938 and doing an externship in Boston's Children's Hospital. The patient in the ward bed was a pretty, teenage girl; I should say that she must have been pretty at one time, because her face was distorted by a massive swelling that half-closed her eyes. Her face was one of suffering but she uttered not a whimper; she couldn't talk. I was supposed to learn how to do a history and physical and this was my first patient. I went out of the ward to ask the preceptor what I should do; how could I ask her even to tell her story? He shocked me by saying she had a severe infection and would probably die soon. One so young and in the bloom of adulthood? I was assigned to another patient.

I returned the next day expecting to see that bed empty. Instead, her eyes were less swollen; they were brighter with recognition. The attending physician walked in. "Isn't it a miracle?" he said as he radiated the joy of it. "We've been given a small amount of Prontolyn," he explained, "and we've been giving it to her in liquid form by mouth every 4 hours. Have you heard of sulfanilamide?"

We students had heard inklings of a new compound being developed by the faculty physicians of the Harvard service but it was being laboratory-animal-tested and wouldn't be available in the near future.

The young woman recovered. I can still see her face in my mind's eye, more than half a century later.

Infection was our chief enemy in those days, we neophytes were taught. Not only were we instructed in asepsis, we were drilled and drilled again. The nurses in charge of operating

rooms and delivery rooms acted like military drill sergeants as we tried not to miss a single step as we scrubbed until our hands and forearms were almost raw; as we learned to be automatons in using elbows and knees to turn off the water faucets, and dry with sterile towels; as we were careful not to rub our noses before thrusting arms into sterile gowns and then into rubber gloves. One little slip in technique, hardly noticeable but immediately picked up by the sharp-eyed nurse, and back to the scrub-sink we had to go and start the routine all over again.

I had the advantage of my physician father's tale about Lister's solution. It had come out in his day, somewhere in the early 1900s. As an apprentice to a surgeon in a hospital in Moscow (my father's education and training took place all over Europe—in Germany, Austria, Riga, and Moscow), Papa noticed that the surgeon made much of the newest and best technique: Soaking his hands in the strong solution of phenolic acid, and then picking up a scalpel with his bare hands, and making the incision. However, that surgeon was more show than substance. After picking up the scalpel, he reached up with his *sterilized* other hand, grabbed the dirty handle of the skylight, and adjusted it to his liking, and then applied the scalpel!

In my learning days, our hands were better treated with Zephiran solution, a mercurial, but not much better; and, we wore rubber gloves.

The Moscow operating room had no electric operating light; the room was built so as to have panels in the roof to admit light. In those climes it had to be built with a southern exposure. Even so, an artificial operating light was needed: An oil lamp that had a highly polished brass parabolic mirror in back of it that reflected a beam horizontally across the room. The surgeon, like nearly every doctor in my father's day, was helpless without the head mirror, through a hole in the center of which one eye could see what blood vessel he needed to tie off quickly, even if it meant twisting his neck till it hurt, just to focus that reflected light on what he was trying to do.

Asepsis? Hardly! The surgeon was to be forgiven if he, without thinking, reached up with a bare hand to adjust the head mirror. Or the skylight, for that matter. What with no air conditioning in those days, the skylight admitted a breeze as well as light. The poor surgeon, sweating as he tried to find that pulsating artery, needed the breeze desperately, or the sweat from his forehead would obscure his vision, or much worse drop into the operative field.

Why did I choose to go into medicine? Well, my European-trained father was a general practitioner and surgeon in Honolulu, but he did not talk to me about following in his footsteps. I did visit him in his office in the Alexander Young Building during my high school years at Punahou, but I did not observe him at work beyond the door of the waiting room where I sat and waited for him and talked to Miss Mildred Suehiro, his girl-Friday. What we knew of his work then and earlier was that he was often away from home and missed meals with us. When we were younger, living in Kahaluu, my two younger brothers, mother, and I would not infrequently ride with him to Queen's in Honolulu, and sit in our car, the first model of a Chevrolet touring car, while he made evening or Sunday rounds. If anything, this and the rest should have soured me on being a doctor as a profession, because we would often have to spend hours in the car, waiting for him, so we could go home to bed, well past midnight. We kids would have worn ourselves out racing around the Royal Palm oval and lawn in front of the old, pyramidal-stair entrance to Pauahi.

As I remember, I never even thought about a job or a profession as I entered Harvard College; I was interested in learning everything. For my electives, I chose anthropology, geology, music appreciation, history, and art. I did not have to major, but chose to go for a BS rather than a BA. Pre-med? No such thing. The comparative anatomy course fascinated me and I was tempted by its Professor Rand, who was also my tutor in my second and third years, to go into that field of research. His influence on me was great, often as a counselor in general.

Summers I had a job at Woods Hole on Cape Cod as an assistant to my father's good friend and fellow refugee from Russia, Paul Simon Galtsoff, scientist and chief of the U.S. Bureau of Fisheries Laboratory there. He and his wife Genia were my surrogate parents (it wasn't so easy to go home to Hawaii during vacations in those days!). Galtsoff was doing research on the sex life of the oyster, *Ostrea virginica*, and I was his assistant—thereby deep into science but with no relationship to medicine.

My roommate in Lowell House and my best friend, to whose family in Rochester, New York, I would often repair during holidays, applied to Columbia P and S in his third year and was surprised that he was accepted. He asked me to do the same. I wasn't interested in going to New York City, but I did apply to Harvard Medical School, sort of casually and with no further thought about it as time went by. I did have one interview with Admissions Dean Pennypacker, a very friendly but probing old man who treated me to lunch in the faculty dining room.

Flabbergasted is the correct word for the way it struck me when a letter arrived from the dean, saying that I had been accepted, provided I paid $50. My roomie, Bob Robinson, cheered (he later became professor of orthopedics and chief of the department at Johns Hopkins). I just didn't know what to do. Instead of tossing a coin, I sent my father a telegram (no phones to Hawaii in those days): IF YOU WANT ME TO GO TO MED SCHOOL SEND ME $50 STOP. I figured I'd leave it up to him to make the decision, and he did, he wired me the $50!

Going back to that third year at HMS, we neophytes, having successfully delivered 12 babies NSD-OA (normal spontaneous delivery-occiput anterior) of their mothers at the Boston Lying-in under the critical eyes of chief residents supervised by famous chief Frederick Irving MD, went out *on district*. We were sent in pairs to any one of several outreach houses belonging to the medical school, in outlying areas of Boston where the poor lived. For two weeks we lived there and, by turns, waiting for and dreading the telephone call that meant one of us had to respond by going to the home of the parturient woman and do the home delivery. We were lucky if a public health nurse was there, waiting to assist, actually to take charge.

I was not that lucky. My first call was to a black family, a *multigravida* in labor who was in full control of herself and quite tolerant of the learning physician who had come to preside at an accouchement that did not need him at all (patients had been screened: No *primigravida*, no complication of pregnancy, no unusual presentations). I was nervous and fumbling. We were not allowed to do vaginal examinations and to do a gloved rectal digital was not very revealing of what was transpiring to us who had no wealth of experience behind us as yet.

The kit we carried with us contained a copper oblong box with lid into which we were to pour water, insert the rubber gloves, the scissors with which to cut the umbilical cord and the ribbon-tape with which to tie the cord. This was to be given to someone to

take to the kitchen and be put on the stove; it was to be boiled for 20 minutes.

Meanwhile the parturient mother in active labor was to place herself across the bed with her buttocks at the edge. Her two legs, flexed at hips and knees and spread open, were anchored by her feet, each on one of two chairs at bedside separated far enough apart for the accoucheur to sit on a third chair in between and face the exposed perineum. For the sake of privacy, a clean white sheet was spread over her legs to make a tent within which I was to do my job. I was also to be given a basin of clean soapy water with which to bathe that presenting private part.

However, time was not on my side. The baby was in a hurry to exit. Rather, it was the mother who had the control. She asked me if I was finally ready, but spared me the word *finally*. I said I was, as they brought me the copper tin of boiled gloves. Boiled, did I say? As I opened it and tried to take out a glove, it was still boiling! The mother was pushing. The head was crowning. As I was desperately struggling to put on the hot gloves, the assembled multitude: Grandma, aunty, and the older children all rushed out of the room because the kitchen stove had exploded. They screamed as they abandoned me completely. I discarded all etiquette and my careful training. With one glove half on, I used both hands, the other bare, to cup the baby's head as out popped a fat little brown girl. We weren't supposed to do episiotomies; and there certainly wasn't any need for one, nor a tear, nor even a need for my presence. The mother looked at me and smiled benignly. The gang came rushing back and watched as I tied the cord fairly expertly next to the umbilicus and then severed it proximately.

The placenta expelled itself as if it too wanted out in a hurry. In those days we had been taught to milk the blood in the cord back into the baby before tying the cord. Not until years later when I was solo on Molokai did I figure out on my own that the cord was pulsating with the baby's heartbeat (the placenta already separating from the uterine wall and not being squeezed by the uterus in its flaccid state immediately postpartum). To milk the cord toward the infant was to contravert the natural state; no wonder so many infants hemolized their overload and turned a bit yellow!

The placenta was handed to the father hovering in the background, who knew from past experience that it was to be buried in the backyard near a tree.

One of my classmates got himself into a donnybrook with the city, and with the medical school, when his first on district delivery turned out to be stillborn, and he casually told its father to bury it in the backyard, placenta and all.

Asepsis? Hardly, but the germs weren't as lethal or as much around as they are nowdays, I expect.

That summer, on vacation at my betrothed's in western Pennsylvania, at a large family picnic, her physician uncle, an elderly solo country doctor, asked me if I would like to accompany him into the house to examine a young woman relative who had gone into labor and had excused herself from the gathering. I was struck dumb when he did so, *per vaginam* with his bare hand (after he had washed it with soap and water) and without any antiseptic. When I explained to him that we had not been taught that way, he just laughed and did not insist that I examine her too, as he had suggested at first.

Jean, my bride that summer, about to teach biology at Carnegie Tech that fall after getting her Masters from Columbia, said she had accompanied Uncle Doc to many home deliveries and had assisted him. He confided in me how once he had delivered a farm woman at her home while the father stood in the doorway with a shotgun on his arm "Doc," the man threatened, "If that baby don't come out right, I'm a goin' to git ya." That was long before the lawyers got into the picture; the shotgun was more effective than an insurance premium. Obviously, Uncle Doc was unperturbed. He finally quit practicing at 95, and he was never sued.

The summer before my last year at HMS, I had a personal experience with sepsis. It taught me two things: (a) the importance of *primum non nocere*, and (b) to be sensitive to the patient's pain as if it were my own.

At *pau hana* at the Bureau of Fisheries in Woods Hole, I was using the electric buzz saw in the basement workshop and carelessly got my left index finger into the blade of the toothed saw. It nearly severed the distal phalanx. I was rushed by car 25 miles to the hospital in the center of Cape Cod, and placed supine on the operating room table. The OR nurse took off the bloody first-aid bandage and doused the finger with Tr. Iodine straight out of the stock bottle. I nearly leaped out through the skylight. The doctor walked in as the nurse draped the hand. He gave me a local block with novocaine and proceeded to stitch up the wound.

Of course, it became infected—the iodine traumatized healthy tissues more than the buzz saw had. I'll never forget the weeks and weeks of frequent visits to the doctor's office in Falmouth and the pain of the *proud flesh* that erupted as a consequence of sepsis. No oral or topical antibiotics were used at that time. Finally it healed, *per secundum*, the distal phalanx slightly askew but functional. Proud flesh is exquisitely tender, I learned first hand.

Always thereafter every patient of mine who had a nail poke or a laceration that required debridement and sutures, was first washed gently with soap and water (preferably pHisoHex), then infiltrated with 0.5% xylocaine into the wound, directed subcutaneously and not through the skin, then explored, debrided, doused with pHisoHex thoroughly before actually suturing, with bare hands (I can document that no wounds so treated in the office the past 50 years got infected).

A collateral confirmation: I assisted at major surgery on nearly all my patients and soon decided who was the best surgeon with the best outcomes. I remember only two who were the most gentle with raw tissues within the body's integument. Natural tissues resist infection; traumatized tissues are vulnerable to the onslaught of bacteria that are ever present despite the most stringent asepsis, and perhaps because of the hard scrubbing that goes on.

My fourth year at HMS Jean and I were separated by distance, but we kept the postoffice busy. There were no electronics, no phone calls, and no air travel. Infrequent long weekends and vacations meant traveling with a classmate in a model-A Ford over devious wintry roads (no freeways). She was teaching in Pittsburgh.

After graduation in June 1939, being penniless but supported by a working wife, I did not aspire to an internship at Boston City or at Mass General. Instead, I was accepted at Pittsburgh Medical Center, a 3-hospital complex. Graduation had been punctuated by a close friend and classmate who almost handed back his diploma because his first name, James, was emblazoned as Jacobus. What upset him, a mid-westerner, was that he thought it was Jewish; he had no Latin in his pre-med.

I was handsomely paid $20 a month *to cover cigarettes and laundry.* However, Jean and I lived with her folks and my whites were laundered with theirs. That saved us a lot because in those days a drawer opened to take out a white shirt usually revealed soot already smearing it. As for smoking cigarettes, unlike my three colleagues in first year anatomy, I never could figure out the rationale of using two fingers pickled in, and stinking of, formaldehyde, to take out a cigarette and place it between one's lips. In college, at a formal, white-tie dinner as guest of the house master Lawrence Abbot Lowell, a mandated, after-dinner Cuban cigar did me in for 48 precious hours. Never again!

A two-year general residency in medicine, ob-gyn, and pediatrics at Sewickly Valley General Hospital was cut short in 1941 (the surgery part) by the imminence of the war and the *invitation* I received in the mail to come serve my country for a year as a medical officer in the military, courtesy of President Franklin Roosevelt.

Infections? The sulfa drugs had progressed from sulfanilamide to sulfapyridine and to sulfathoxizole all of which made a lot of patients sicker than before. The pneumonias were invariably hospitalized for 10 or more days. We were hearing of the Trueta treatment of compound fractures by irrigation, debridement, salting with sulfa and then sealing in a plaster cast and allowing maggots to do their job on the laudable pus.

In October of 1941, as first lieutenant MC AUS, I was for a brief stint at Fort Belvoir in Virginia giving immunizations to raw recruits as they filed between two of us medical officers. Medics caught the few who fainted afterward and helped them to empty cots.

Jean and I were blissfully living an 8 to 4 existence in a cute cottage outside the sprawling army base. Late in the afternoon of December 7, we drove through the front gate to visit the PX. The sky was dark to the west, with visible lightning and distant thunder. My answering salute to the guard at the gate was still awkward, especially as I had to switch hands on the steering wheel in order to do so. We had heard on the radio the first shocking news about Pearl Harbor and the heavens to the west seemed to confirm it was the dark clouds of war that approached us. Next day Jean visited Hawaii Delegate to Congress Samuel Wilder King and was reassured that my family in Hawaii was safe. King gave her a pass to the gallery and she heard Roosevelt declare war on Japan.

A month later the wrenching tearing away from my beloved as I boarded a transport at Brooklyn Naval Yard was shared by a multitude of other GIs and officers. We even tried to get an officer married just before he kissed his betrothed good-bye. "Miceli!" the master sergeant roared out amid the turmoil. "Answer with your first name as you step on the gangplank." "Joseph," came the answer as the clinch tore apart.

We all had overcoats and long-johns based on the rumor we were to go to Iceland. Instead, the convoy of seven ships steamed south and through the Panama Canal, thence to Australia. We soon discovered that we were the 9th Station Hospital, a 250-bed unit with 30 regular army nurses aboard, bound for New Caledonia.

Shortly after arrival at Noumea and during the bivouac at Paita, I became a victim of another medical experience, the result of which *trained* me even more deeply as a physician by reason of making me a patient first. I developed a lobar pneumonia, during 10 days of which I had total amnesia of a delirium state. Without benefit of x-rays (our unit had been smashed when unloaded onto the dock) and no intravenous fluids, I was treated by my colleagues and by dedicated nurses around the clock in an empty 40-bed ward tent that was left behind for my sake as the unit moved up the island farther north. I was in a hand-crank hospital bed, in an old oxygen tent powered by a small generator, supplied with ice to cool the oxygen. The ice was requisitioned or rather cajoled by two colleagues who boarded a ship in Noumea. They were caught in the act by the division surgeon, who helped in the pilfering. The new sulfapyridine was given to me by mouth; it made me sicker, but I credit the nurses and my fellow doctors for pulling me through, rather than the sulfa (to which I have been allergic ever since).

Convalescence took 6 weeks, during which time dragged on and depression set in; there was no Prozac available then. The illness and the sequelae made me a better physician, I swear. However, I will never again let a kind nurse shave me with a dull razor!

During my convalescence, near its end, the cot next to mine in the ward tent became occupied by our dentist. He had an ischiorectal abscess that was causing him great pain. Sure of the diagnosis, the surgeon elected to drain it at bedside (I do not remember whether it was so decided to save the OR tent from being contaminated by *E. Coli* and staphyloccocus, or whether the OR tent was not set up yet). I had a ringside seat as Joe Phyllips, the surgeon, with nurses and assistants hovering around, opened up an ampoule of a brand-new anesthetic—Pentothal—just arrived. He filled a large glass syringe and attached a 20 gauge needle which he inserted into a vein. Bruggle was in the left lateral decubitus position, his *okole* prepped and draped and right in front of me. Joe told his patient to start counting out loud as he slowly pressed in the plunger: "One, two, three," Bruggie kept counting. When he got to 80, Joe gave up waiting. He grabbed the scalpel and made a deep incision; the pus poured out, overflowing the basin. Joe packed the incision open with yards of lodoform gauze, inserted it deep into the abscess cavity. Bruggie: "90, 91, 92" finally woke up and asked "When are you going to start, Joe?" He was unaware that it was over. That might have been the beginning of the same-day surgery now in vogue.

In 1994, I, a captain MC AUS, was the receiving medical officer at the 9th Station Hospital on the beach not far from the Matanikau river on Guadalcanal. The island had been secured prior to our move from New Caledonia, but there were still occasional air-raid alarms as the Japanese forces were being gradually pushed out of Munda, an island of the Solomons to the northwest of us. Proof of such safety was that we had a new batch of nurses' quarters within a double barbed-wire stockade, not to keep them in but to keep out the rapacious officers and enlisted men. I was the last one of Task Force 6814-Q that left Brooklyn Navy Yard in January 1942 to be rotated home after two and a half years overseas.

The surgeons had a GI in a ward bed with a badly infected GSW wound and compound fracture of his forearm. Our whole staff was excited because we had requisitioned—and lo and behold—received several large syringes full of penicillin in oil, 5 cc each, to be given deep into the gluteal region of the soldier. We had heard about it, but had never expected to get the new *wonder drug*. The soldier recovered enough to make it back to The States by air-evac.

That was 50 years ago. I retired from general practice in Kaneohe, Oahu in 1991 but still see a few patients bedridden in their homes and I volunteer at a comprehensive health clinic one

morning a week, now 55 years with MD after my name.

What a remarkable half-century it has been, actually three-quarters of a century since I was born in 1913! I was in two world wars. As a child in the Ural mountains of imperial Russia, I remember seeing the first clear glass incandescent light bulb invented by Thomas Edison. As my physician father, my mother and younger brother, and I escaped from the Bolsheviks during the Russian revolution and arrived in Vladivostok, thanks to the American Red Cross and the American Expeditionary Force in Siberia, I remember seeing a model-T Ford car and still can smell, in my imagination, the strange odor of gasoline exhaust. In 1925, as a boy living in Kahaluu next to Libby, McNeil & Libby's huge pineapple cannery, I remember a neighbor's new Atwater-Kent, full-of-static, wireless radio. That same year I remember seeing, with wonder, a small seaplane circling over our Kahaluu house and landing in Kaneohe Bay, then taking off to windward. The age of radio and of airplanes had begun. The age of black-and-white television ensued, followed by color. Much earlier, we attended movies from "flickers" to full color. Jet engines on planes supplanted the propellers and finally the electronic age came into being, the changes and the "new" things coming ever faster and faster. Finally, just as I reached retirement age, the practice of medicine changed and I was glad that I would not have to be a part of the provider/consumer, bottom-line-business, third-party-intervenor bureaucracy that it seems the healing profession will have to submit to, unless rescued by organized medicine.

Biaxin, the latest? Never! The bacteria are gaining on us and the viruses are thriving.

Aloha to those dedicated physicians who follow in our footsteps, healers *per primum*, businessmen and women perforce. *Auwe!*



John Iorwerth Frederick Reppun, MD
Ready to deliver the first baby, Boston 1939

The Physician as Patient: The Thallium Treadmill Stress Test

J.I. Frederick Reppun MD

I don't think it's often that a physician describes how it feels to be a patient; we order tests on our patients glibly, without realizing what it's like for the patient to undergo the procedure. The following is a personal experience that both physicians and patients might enjoy reading.

I'll not hide names or places, because the facility and its staff deserve the praise I intend to give them. The facility, of which we in Hawaii can be very proud, is Queen's Medical Center in Honolulu (QMC) and its nuclear medicine imaging department.

Asymptomatic cardiac-wise, I had occasion to require a thallium treadmill stress test (TST) at QMC. Appointment and preregistration were done by phone, saving a great deal of time and fuss for all. On arrival, I was directed to the area where several necessary consent and disclaimer forms had to signed and then delivered to the actual imaging complex. The cheerful woman at this desk whips these out in record time.

Jody, the young, pleasant, cardiac imaging tech who was in charge of that particular section, quickly came up to me as I waited in the pleasant and comfortable waiting alcove and said she would be attending to me. A young man in a scrub suit, wheeling a shopping cart full of supplies, announced himself as an I.V. tech and took me to a small room around the corner, where he inserted an intracath into my wrist (it had to be the left) vein very expertly. Not as in the days pre-AIDS, he put on gloves to do the procedure—because, horror of horrors, he might become contaminated by blood! Then, back to the alcove and a short wait.

Jody took me into the inner sanctum to show me the massive treadmill and demonstrated how it worked by getting on it herself. She pressed several buttons to illustrate how it could be speeded up from a rate of 1.7 mph to 4.2 mph, the latter indeed a fast walk, while the patient hangs on to a horizontal, firm bar. The two young nuclear medicine techs, Mike and Brian, who comprised the staff under Jody, hovered around and added explanatory comments and comforting reassurances. All were gowned in professional long white coats. The spacious white-walled room hummed with numerous motors as they were turned on and into action. A tall EKG podium was wheeled into place near me and I was quickly hooked up to it with wires all over my bare chest, a velcro belt strapped around my waist, and a sphygmomanometer applied to my right arm (of course, so as not to obstruct the intracath on the left).

As we waited for Joana Magno MD, cardiologist, to stand-by, I had a pleasant conversation with Jody and learned that Jody's grandfather on her mother's side was Leon Mermod MD, the original physician in charge of the Honolulu Blood Bank before Forrest J. Pinkerton MD took over. When I knew Leon in the 1950s, he was practicing in Waipahu. He and his brother Roger, also a physician, had been pineapple plantation physicians on Lanai together, long before my tenure there in 1946 to 1948. The Mermods were colleagues and good friends of my father in the 1920s and 1930s (a bit of medical history).

As soon as Dr Magno appeared, I straddled the treadmill as instructed, it was turned on and I was told to step well forward while holding onto the bar, and walk fast enough to keep up. Mike was on my left, the irradiated thallium in a syringe affixed to the intracath. Just before the last minute of three, he injected it. Brian was on my right, pumping up the sphygmo and asking how I was doing. The EKG podium to my right and behind was running a continuous strip and being monitored. When the three minutes were up, I was panting and my heart rate had increased to the desired level for my age, 188 per minute. A team of 4 people was in close attendance—permeating the procedure with comforting reassurance.

Dr Magno left as I was quickly disconnected from all the wires except the sphygmo, and assisted up two steep steps to lie down on a very narrow, egg-crate padded platform. My right arm was placed on a table alongside; my left arm was placed so as to be behind my head, ie, out of the way of my left chest and it was strapped down tight so that I could not move it, but gently, of course, I was asked to stay absolutely still, but was allowed to breathe, naturally, and allowed to answer questions by talking. Then a huge, thick, round disk supported on a metal bar that held an air hose that was obviously to cool the camera mechanism inside was swung over me so as to peer at my heart from the far right, through the right lateral chest wall and lung. Motors were running. Every few minutes the disk moved a few centimeters each time in an arc over my head and chest. Forty five minutes later—a very long time, it seemed—and 32 stations later, it had swung automatically clear over to my left to peer at my heart through the left lateral chest wall and lung. By then, my left shoulder was beginning to ache. When it was finally released by Mike or Brian, I could hardly bring it down without twinges of mild pain. However, I was closely monitored and questioned as to how I was doing at intervals throughout the long period of time.

I was assisted in sitting up, my feet helped over the side and onto the top step, to rest and recover while the "film was checked." Finally, Marc Coel MD, the nuclear medicine specialist, came out of the inner computer room where he had been reading the films. He greeted me and told me that my heart had a small area of ischemia at the apex—I felt nothing at all abnormal in my chest—and ordered an application of NTG paste to my right upper chest by Mike, as a precaution, I guessed.

I was helped down off the narrow platform, put my shirt back on and spent the next 3 hours sitting in the waiting room where I nearly froze to death in the subterranean bowels of QMC to

which the air-conditioning system brought the coldest air! I could have asked for a blanket but decided to tolerate it as I nearly finished reading the last half of the 11th volume of the Aubrtey/Maturin series by Patrick O'Brian, fictionalized history of the time of Napoleon Bonaparte.

Mike had me drink 2 large cups of water and allowed me to eat some crackers I had brought along. Jody had explained to me that the reason for NPO after midnight and no food or fluids pretest was that the tagged thallium perfused all the muscles in the body, the most continuously active muscle being the heart, therefore concentrating it there, and the gastrointestinal area needed to be kept quiet and inactive, or be in competition with the heart's thirst for the thallium. This period of rest, quiet, little food but a fluid flush was obviously to clear the irradiated thallium from the body, and given enough time to do so after the heart had been stressed and pictured. At the end of the 3-hours, the repeat picturing would be of the quiet, resting heart by contrast; if any defect was shown, it would be necessary, as in my case, to see whether it would disappear at the subsequent go-round, indicating perhaps temporary spasm, rather than a permanent infarct.

Just as I got to the exciting ending of my book, Mike came to fetch me, help me up onto the platform, and I submitted to the repeat process. An hour later, I was through, again the most uncomfortable part being my left shoulder as my left arm was strapped awkwardly, hand on the crown of my head. Once more, he had injected the same dose of thallium into the intracath before I climbed back onto the platform.

This time it was Dr Jarret Ko who came out to greet me and invite me into the computer room to view the screen.

This was the most fascinating part of the whole procedure. As a physician/patient, I was able to appreciate the marvel that modern technology has now equipped us physicians with specific and precise means of diagnosis that in times past were denied us. Dr Ko told me that the EKG is only 60% specific, ie, 40% of no value; until recently it was the only means of confirming cardiopathology since its invention in 1903.

When President Harding died in August 1923—just 71 years ago—of an acute myocardial infarction, the death was ascribed to *Apoplexy, caused by acute indigestion from crabmeat—copper ptomaine poisoning*. The EKG was too cumbersome to be taken to the President's hotel room in San Francisco during his terminal illness.[1]

When President Eisenhower had his heart attack in 1955—just 40 years ago—the pragmatic treatment was prolonged bedrest (he recovered without benefit of specific medication).[1] At the time, I was on Molokai (at times the only GP on the island of 5,000 souls). Cardiologist Bill Hartwell used to come over in consultation and prescribe strict bedrest for 30 days minimum. "Instruct the patient: This is one illness you cannot fight your way out of," he would say.

Here at Queen's in front of me on the big screen was this tiny little red and pink heart. It was in a rectangular box outlined by transparent lines. Dr Ko spun the box around within it spinning on a three-dimensional axis. "See," he said, "There's a black spot at the apex; it has not perfused with blood; it is ischemic."

A lay person would have thought it was a Walt Disney artifact. Instead, it gave a precise and specific diagnosis; it projected a precise and specific way of treatment and eliminated all guesswork. So do an MRI and a CT-scan and many other modern medical technologies.

The health care gurus talk about how expensive these are; that they should be rationed in one way or another in order to keep the costs of medical care down, as they relate to GNP. I thought to myself: Now that we have these marvels, why not let them be used for the benefit of all our people, rich or poor, young or old, as specifically indicated by professionals trained in their use? I looked around me. What a marvel of adjunctive engineering. What a marvel of staffing with trained experts, each of whom knows exactly what to do in small or big ways, putting common people to work in service to humankind. What a contrast to the workers in a military tank or bomber factory, who produce nothing of lasting value to anyone. What a contrast to what I had seen in a Siberian city hospital in 1992: Excellent and caring physicians working only with their five senses, without one CT-scan in a city the size of Honolulu, not to speak of a dreamed-of, nonexistent MRI!

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The Role of the Medical Home and Interprofessional Collaboration

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The medical home plays a critical role on the interprofessional team to improve school readiness of children before they enter primary school. School readiness and optimal health require a combination of medical care with health and social services both to prevent and to improve the effects of negative conditions. Hawaii Medical Association has two new projects aimed toward that end.

"The whole is greater than the sum of its parts."
—Unknown

Imagine a health center where families coming for a health care visit are welcomed by an early childhood educator, nurse practitioner, and social worker. As the families come in for their half-hour appointments, they can expect staff to offer them a snack or a brief discussion on a typical prenatal or infant care concern. The child and parent are accompanied to the examination room by the nurse practitioner and medical resident where they can talk about the parents' concerns, priorities, and resources. Gradually, a feeling of trust is established between the family and the interprofessional team.

Through this interprofessional collaborative, families learn to become responsible partners in their child's health care. This collaborative center, known as the Healthy and Ready to Learn Center (HRTL) in Ewa, seeks to support the community physician in providing a medical home through interprofessional collaboration.

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According to the American Academy of Pediatrics (AAP), the role of the primary care pediatrician is to assure a medical home for every child. A medical home involves providing pediatric primary health care that is comprehensive, continuous, family-centered and coordinated.[1] Primary health care as defined by the AAP is accessible, affordable, first contact, continuous, comprehensive, and coordinated to meet the health needs of the family and individual.[2] Because of the dramatic social and economic changes in today's families and communities, providing a medical home is a formidable challenge facing the physician. Moreover, in the wake of health and school reform, medical homes are being asked to increase their involvement with children at risk of school failure. School readiness and optimal health require a combination of medical care with health and social services both to prevent problems and to improve the effects of negative conditions.[3] One way of prevention that is gaining public attention is interprofessional collaboration, whereby professionals and organizations agree to work together to improve health, education, and social services for these children and families.

Unlike primary care clinics, HRTL complements the medical home-community physician with services such as referral, consultation, and training. This collaboration between public and private providers of personal health services is a way of ensuring comprehensive health care. HRTL staff provide physicians with patient information as well as professional-specific information for patient management. Professional-specific information can include developmental expertise from the early childhood educator and domestic violence information from the social worker. Another collaborative service of HRTL is to routinely fax timely information on patients' visits to doctors' offices–the medical home. Facsimile machines are offered by HRTL to physicians interested in using HRTL services to gain physician buy-in to the program. Gaining physicians' participation, establishing trust and respect, and listening to family concerns using jargon-free language are interprofessional collaborative elements supporting the medical home.

Why should physicians be interested in the medical home and interprofessional collaboration?

"Every child deserves a medical home."[4] With this vision the Hawaii Medical Association, the Hawaii Chapter American Academy of Pediatrics, the Department of Health, and the University of Hawaii, Department of Pediatrics adopted their 1979 Child Health Plan. The Plan called for an integrated system of care for infants and young children. Following this plan, a series of programs and landmark legislation were initiated

building on this integrated system of care for prevention and early intervention for young children and their families in this state. It began with the Hawaii Healthy Start Project for child abuse prevention and positive child development and the Medical Home Project which targeted physician involvement and education in the "new morbidity."[5-6] In 1989, early intervention services for infants and toddlers were placed in the Department of Health Zero-to-Three Hawaii Project and Hawaii's State Law, Act 107-89, was added to broaden the integrated system of care for children.[7] In 1989, President Clinton, then the chair of the National Governors' Association, developed the National Educational Goals, which stated "All children will be healthy and ready to learn when they enter school by the year 2000."[8] David Hamburg MD of the Carnegie Foundation of New York and Ernest Boyer, distinguished educator and author of *Ready to Learn*, emphasized that the health and education of young children are inseparable.[9] Hamburg and Boyer recognized that health and education workers must join forces to prevent poor health and school failure particularly for young children at risk.

Increasingly, pediatricians are expected to function as medical specialists on diagnostic and evaluation teams or school individual educational plan meetings for children with special health needs. The team expects the pediatrician to provide not only medical expertise but also developmental and behavioral knowledge. In keeping with the current trend to collaborate on health and education initiatives, pediatricians need the support of the community to provide health and education services to families at risk. The community can support the physician by educating at-risk families to become competent health care partners. On this basis HMA developed its two newest initiatives: The already mentioned Healthy and Ready to Learn Center and the Health and Education Collaboration Project as service delivery and training projects.

Interprofessional Collaboration in Service Delivery

"It takes a whole village to raise a child."
—African Proverb

The HRTL program concentrates on the problems that families face in the service delivery system. Melaville and Blank point out significant barriers preventing a coordinated system.[10] These are poor access to health care, a lack of shared information and coordinated services between providers, and a lack of interprofessional training opportunities for physicians, social workers, and educators. Chaotic circumstances inherent in crisis management can prevent families from getting the appropriate services they need when they need them. The current service delivery system lacks the ability to go beyond specialized fields to meet the multiple and pervasive problems facing families today.

HRTL seeks to demonstrate a family-centered, interprofessional collaboration approach to at-risk pregnant women, mothers, and children from birth to five years in Leeward Oahu. Through interprofessional collaboration, the program is exploring ways to deliver integrated health care and education services by an interprofessional team. The interprofessional team consisting of nurse practitioner, early childhood educator, and social worker, will work jointly to provide an array of services. These include prenatal and postpartum care, family planning, routine well-child care, child development information, parent-child activities, supportive counseling and referral services.

What role do physicians play on the interprofessional team?

The physician takes on different roles—consultant, medical professional, facilitator, or educator. Interprofessional collaboration focuses on the interrelationships among the pediatrician, nurse practitioner, social worker, and early childhood educator. In the community, the pediatrician provides the medical home for families while relying on HRTL staff to expand their support via classes in child safety, parenting, prenatal care, and family planning. Through these classes, families learn responsible, preventive health care and ultimately, to select a community physician as their medical home.

Intercollaborative work presents many challenges and benefits to the physician. Some of the challenges are overlapping skills and unclear roles of the professionals, varying philosophical and language differences, and inherent hierarchical medical models which can interfere with collaboration.

Some of the benefits are derived by shifting families from an illness orientation to a cost-effective, well-care orientation. But physicians need help in educating families to eat right, parent effectively, make and keep appointments, follow through on medication, and become responsible patients.

How professionals resolve the challenges and maximize the benefits of interprofessional collaboration depends on appropriate training.

Interprofessional Collaboration in Training

The Health and Education Collaboration project (HEC), a four-year federally funded training project will be targeting preservice professional levels, specifically the pediatric and obstetrics and gynecology residents and early childhood and social work doctoral students. Currently, HEC and Dr Louise Iwaishi, director of the pediatric residency program at UH, are developing resident training on family-centered interprofessional collaboration. In the pediatric residency program, the training is included in a two-month developmental adolescent rotation. One challenge that faces residents is assimilating family-centered collaborative concepts and applying these concepts in their clinical experience. The training focuses on residents promoting the medical home, empowering families, learning the integrated roles of the professional staff (nurse practitioner, social worker, and early childhood educator), and understanding the importance of early childhood education.

The resident training experience is composed of several parts. In supporting the medical home, the resident learns about the family in pre and post-conferencing with the HRTL team. Each member of the team provides a unique perspective specific to his or her discipline. Equipped with this information, the resident listens to the families' concerns, priorities, and resources thus practicing family-centered care. Next the resident assesses the well-care needs of the patient and provides developmental information to the parent. This includes the importance of early childhood education.

One of the innovative features of the training is the importance of early childhood education. A recent Carnegie report states that "the quality of young children's environment and social experiences has a decisive, long-lasting impact on their well-

being and ability to learn."[11] Increasingly, the research crossing all professional lines documents that a quality early childhood education can reverse the adverse effects that compromise a child's development.[12-15] The educator's role at HRTL is to encourage families to recognize a variety of early childhood education experiences better prepares the parent and the child for the experience of school.

Further pre-service training will be based on the collective expertise of HEC staff and the members of the Commission on Leadership in Interprofessional Education.[16] This Commission, formed in 1990 and headed by Dean Corrigan of Texas A & M, is composed of deans, administrators, and professors from universities interested in advocating for the development of interprofessional education. Through the Commission, the Project will create linkages between the local university and HRTL. HRTL will serve as a practicum site not only for pediatric residents, but also for ob-gyn residents and graduate students in social work and education.

HEC will field test collaborative strategies among the professionals at HRTL. Based on these experiences, HEC will disseminate information both locally and nationally on the best practices to promote family-centered interprofessional collaboration.

Conclusion

The medical home plays a critical role on the interprofessional team to improve the well-being of at-risk children (birth to five) and families to improve school success. School success and optimal development for children require not only medical care but also health and social services to both prevent and counteract negative conditions. Through such initiatives as the HRTL collaborative and the HEC project, the medical home and interprofessional collaboration can be fostered. Shifting direction from the traditional deficit models of care to comprehensive and preventive ones will increase accessibility to services for families most in need.

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Outcome-Oriented Quality Assurance in an Ambulatory Setting

Joseph W. Humphry MD, FACP*

Quality assurance has become an increasing concern to the government, health care plans, and organized medicine as managed care systems reduce absolute dollars spent on care. Most small group practices and individual physicians have little control over the various methods used to evaluate the quality of care. A computerized quality management approach improves quality assessment and directs local changes to improve patient care.

The Quality Assessment Program has been developed at the Waianae Coast Community Health Center (WCCHC) over the last 6 years. A federally qualified community health center, the quality assurance program is a computerized clinical information system linked to billing that supports a quality assessment program. It promotes provider involvement and measures outcomes of medical care. The system efficiently captures data related to hypertension and diabetes management, childhood growth, immunizations, health maintenance activities, and practice patterns. When fully developed with links to laboratory and prescription information, the quality assessment program is capable of displaying a wide range of provider behaviors, clinical information, and short-term outcomes, such as diabetes and hypertension control.

Major changes in diabetes management have been effected by the quality assessment program. The data and analyses from the clinical information system are presented to the providers in several formats. Education focused on improvement in clinical performance supports positive change to be captured in subsequent data analysis. The locally developed billing and clinical information system has improved care and provides the clinic staff with timely feedback on performance.

A practice-based quality assurance program measuring selective short-term outcomes is both feasible and effective in improving medical care. The system design allows for the integration of information into larger data sets complementing regional and national efforts at profiling practice patterns.

Assessing and improving quality of care is an integral part of the health care reform. Quality assessment, being mandated by health plans and federal regulations, is viewed by most physicians as an intrusion into the daily practice of medicine. Critical reviews of quality assurance programs have recommended discontinuation of the use of individual chart review and the Peer Review Organization.[1-4] Current trends focus on monitoring outcomes, establishing guidelines and developing provider profiles.[5-8] Outcome measurements relate to long-term morbidity or mortality data, and compare regional or institutional variations using large data sets.[9-10] Except for a limited number of focused studies mostly in academic centers, there is no description of computerized practice-based effort at assessing quality in the ambulatory setting.[11-12]

The implementation of a locally owned quality assessment program is imperative to maximally improve care.[13] The WCCHC computer-based system measures individual and practice-wide parameters of care. The successful collaborative efforts of the providers, administration, and systems developers have resulted in a sophisticated data collection system that is the basis of the quality assessment (QA) program. The information generated has led to major changes in diabetes management and continued improvement in a number of other clinical areas.

Methodology

The WCCHC serves approximately half of the 46,000 people in an economically disadvantaged community. Services include primary care, dental care, selected outpatient specialty care, community outreach programs, and a free-standing emergency care center. By ethnicity, the Waianae community is over 50% Native Hawaiian or part Hawaiian with the rest of the population from a mixed ethnic background. The Native Hawaiians, the indigenous people of the Hawaiian Islands, suffer from disproportionately high rates of type II diabetes, cardiovascular disease, certain cancers, and infant mortality.[14]

In 1986, a review of records showed a high percentage of diabetic patients who had failed to complete their nutritional counseling, and a team approach to diabetes management was organized. A nutritionist, a nurse, and a physician co-managed the patients on one morning each week from the physician's office. To measure the impact of this program, a computerized tracking system was developed to record demographic information, weights, blood glucose, frequency of visits, and hospitalizations.

In 1988, the Hawaii State Diabetes Control Program (HSDCP) initiated complication-screening clinics for patients with diabetes at the WCCHC. The HSDCP, targeting areas of high risk populations, accumulated information regarding risk factors and an abbreviated medical history while screening patients for complications. The information obtained from the HSDCP added to WCCHC knowledge of the diabetic population.

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Initial Data Analysis

Selected results of the computer-generated outcome measures provide examples of the types of information used in the QA program to direct program development and influence the providers' approach to patient management. Results are presented in chronological order followed by program development response.

Over the first 4 years of tracking, approximately one-third of the patients with diabetes failed to receive care at WCCHC in the following years (Table 1). These patients typically sought care for acute illnesses or acute complications of diabetes and had lapses from one to several years between physician contacts. Fifteen patients in the 1990 population were hospitalized; only one pregnant patient for diabetes control. In half, the principle diagnoses for admission were not related to diabetes (ie, a suicide attempt, pneumonia, COPD, etc). Diabetes-related complications, ischemic heart disease, and lower extremity infection accounted for the other 7 admissions. The 5 deaths over this 2-year period occurred in patients under the age of 60, all of whom were smokers; all died from underlying cardiac disease, and 60% had evidence of alcoholic cardiomyopathy. Outcome tracking of patients with gestational diabetes managed through a team approach showed rewarding results for the 18 months analyzed.[15]

The HSDCP profiled the Waianae diabetic population based on the screening of 107 patients. The most common self-reported problems in these patients were arthritis (50%) and lower back pain (43%). Significant other problems included asthma (21%), COPD (19%), and depression (17%). Sixteen percent of the population reported heart disease, 48% were hypertensive, and 28% currently were smokers.

Program Development—1988 to 1991

From 1988 to 1991, there was significant growth of the WCCHC diabetes program. Patients attending the diabetes clinic formed a diabetes support group that met weekly. Small grants funded a worksite wellness project involving screening and employer/employee education, and a local diabetes newsletter for patients was developed. The HSDCP held quarterly clinics screening for hypertension, dental disease, ophthalmopathy, and foot problems. Diabetes management was integrated into and supported other developing programs such as the *Malama Ola*, providing nutritional counseling to high-risk patients, and also the Waianae Diet Program, a culturally sensitive approach promoting traditional foods.[16-17]

Current Program Development

In 1991, two major events changed the QA program and the diabetes management program. WCCHC introduced its own computerized billing software permitting the tracking of all patients with diabetes or hypertension. WCCHC has added files for health maintenance and immunizations and has the capacity to monitor individual patient problem lists and prenatal care including pregnancy outcomes. WCCHC will introduce laboratory results and prescription drug files in the near future.[18]

WCCHC received a grant from the Office of Minority Health to develop the Diabetes Intervention Project, a community-based diabetes management program targeting noncompliant patients. Funding to a large part depended on needs documented by a computerized tracking system and has lead to major improvements in the management of patients with diabetes.

Recent Data Analysis

Data became available in 1991 permitting analysis of the 45,000 patients captured in the system since 1989. The expanded information allowed evaluation of a broader range of quality issues. For example, the indications for long-term anticoagulation increased to include most patients with chronic atrial fibrillation.[19] WCCHC analyzed the frequency of ordering pro-times recognizing the substantial risk to patients who are not adequately followed while they are on oral anticoagulation. Of the 49 patients on oral anticoagulation, 76% received follow-up pro-times in 30 days or less with 16% having tests done at greater than 45-day intervals. The Center began monitoring the providers' performance flu shots in 1993. Immunization rates varied from 25% to 40% among physicians with a clinic-wide average of 34%.

In 1993, a study of blood pressure control in our patient population who had diabetes found that 39% of the 469 patients with diabetes had an average blood pressure (over the last 3 encounters) greater than 140/90. In comparison, in the Diabetes Intervention Project, only 25% of the 69 patients had poorly controlled hypertension. A more complete breakdown of this data is presented elsewhere.[20] Longitudinal tracking of the first 21 patients in the Diabetes Intervention Project showed 5 had lost 10 pounds or more after one year.

Software Development

Medical information systems managing health plan data assess practice patterns as a means to indirectly measure quality.[20] To supplement practice profiles generated by third-party payers, WCCHC's QA program has substantially more information about provider performance than can be obtained from systems using claims data. The QA program has stressed provider involvement and acceptance by locally developed software rather than attempting to introduce a completely automated medical record.[21-22] Designed primarily for the WCCHC, the software can be modified easily to meet future regional and national data sets standards.[23] The WCCHC computer system has several objectives that promote efficiency and clinic wide acceptance. Computer skills are not required of all of the providers or staff. The system provides incentives for staff to improve their computer skills, but the system does not rely on these skills to function effectively. Clinical data is to be collected with the least amount of effort on the part of the provider. The structure of the program allows a substantial amount of the information to be collected passively from the billing record. Active collection of data such as the vital signs are captured on the billing encounter form at the time the vitals are taken. Data collection has to be accurate and complete. The insurance claims generated lacked accuracy to allow for the most effective practice profiling.[24] Flags in the computer system check entries to assure that they are in reasonable range, and reject claims with specific diagnoses, such as diabetes and hypertension, unless the required clinical data is collected. Timely and meaningful feedback is given to providers. On-line reminders of preventive services and other clinical alerts are used to improve quality.[25] Diseases or procedures that are relatively common are evaluated with practice patterns using the most recent available data. Finally, the QA system needs to be effective and efficient.[26] The QA program is capable of evaluating the QA process to assure cost-effectiveness.

Discussion

Physicians have always been responsible for providing the best possible care to patients, and now more than ever are held accountable for the cost and quality of medical care. The development of techniques to monitor outcomes assessment and standardization of care are now national priorities in the effort to provide affordable quality care and establish accountability.[27] Practice-based quality management must parallel these national efforts. The efforts at WCCHC to improve patient care are based on three principles.

The patient ultimately determines the quality of care; measures should reflect the effect of treatment based on patient parameters and outcomes. Practice profiles analyzing short-term patient outcomes are more than a provider profile and recognize the complexities in medical practice that extend beyond the walls of an office. Substandard quality of care as measured by the WCCHC approach may identify poor performance by a provider, the WCCHC health care system, or a patient.

Outcomes assessments should provide enough detail to guide physicians in making positive changes in the delivery of care.[28] The WCCHC efforts at developing an alternative approach to existing QA models is based on the principle that providers will improve the quality of care given reliable and useful information on his or her strengths and weaknesses. The primary incentive for change is improving the quality of life for the patient,[29] with financial, educational, and administrative incentives introduced when other feedback efforts fail.

Information does not have to be statistically significant to be clinically relevant. The outcome of an individual patient is not determined by statistical probability.[30] The system enhances the knowledge gained through practice by better organizing personal practice experience over time. For example, having 5 out of 21 patients accomplish greater than 10-pound weight losses over a year does not meet statistical significance, but for those 5 patients, these changes may influence individual long-term outcomes. In the 20% of patients with good diabetes control, the provider can ask what factors have prompted positive behavioral changes without requiring statistical validity in the conclusions.

Outcomes usually refer to the epidemiological studies of major health events such as death, complications or major procedures. Measuring therapeutic effects of treatment such as diabetes control and blood pressure control are referred to as short and intermediated outcomes of care and differ from measures established by practice guidelines or the more common measures of large outcome studies (Table 1). The distinction is important as the measurement of the quality of care by these different tools will likely come to very different conclusions.[31] The recent Diabetes Complication and Control Trial results,[32] showed that diabetes control reduces the progression of microvascular diabetes complications in insulin-dependent diabetes. Based on current knowledge, the control of blood pressure and blood sugar would logically influence the long-term outcome of patients with diabetes and would be a much better predictor than those measures captured in a process.

Continuous feedback on the quality of care changes both the provider's behavior and approaches to health care delivery. For most patients continuity of care needs to be established to improve diabetes control and reduce complications.[33] Knowing that many patients fail to get regular follow-up encourages providers to involve patients in their own care early and actively discussing the importance of follow-up care. In an ethnically mixed population, care plans have to be individualized. Intense health education or frequent return visits may result in the patient's noncompliance. Continuity of care, in part, is built on addressing patient concerns. A patient with chronic arthritis and diabetes may seek relief from the former while the physician focuses on the later. The diabetic population study (1990, n=69) had 5 premature deaths, all in smokers, and the rate of smoking is high particularly in the younger age group. Regular and effective counseling regarding smoking is supported by the timely feedback on the rate of cigarette usage. Follow-up reports results of altered practice styles.

Improved ability to measure the impact of care has directed resource allocation at WCCHC. The justification, direction and prioritization in program development for patients with diabetes at the WCCHC is based on the systematic analysis of patient care. Documenting a greater than 50% no-show rate to nutrition counseling in 1986 prompted a team approach to diabetes management. The limited profile based on a single provider's practice lead to the tracking of all patients with hypertension and diabetes. Providers have recently requested the addition of head circumference to the existing height and weight measurements to track pediatric growth and development. With obesity in the female diabetic population greater than 90%, the nutrition department developed the *Malama Ola* program and the Waianae Diet Program. Outcome data from the Waianae Diet Program shows remarkable improvement in blood glucose control.[13] WCCHC also supports a free smoking-cessation program.

The Diabetes Intervention Project targets the high-risk, noncompliant diabetic population. This program provides integration of a community-based diabetes program with a network of groups on the advisory board, diabetes management by community health workers supported by the diabetes team, continuation of the complication screening activities without direct HSDCP support, and the development of a number of community outreach projects.

The existing tracking system enhanced with lab values regarding lipids and Hemoglobin A-1-C will be used to evaluate the medical impact of this program, and provides data to seek third-party reimbursement for these services after the completion of the demonstration project.

The QA program has used several methods of packaging and delivering information to providers seeking the most effective approach. Feedback to providers must be meaningful, timely and presented in a positive manner.[34-35] Examples of these methods include: 1. Deficiencies in immunizations and preventive health exams are now listed on the provider's appointment schedules. 2. The results of the flu immunization ranking was shared with individual providers through a memo, and future analysis will compare year-to-year performance as well as the results compared to other providers. 3. Provider meetings were initially used to present the experience with diabetes management and discusses alternative approaches to care. 4. Sensitive issues such as poor performance on hypertension control in the diabetes population is presented to the provider group and not initially broken down to individual performance. 5. WCCHC has an in-house *Journal* written by the providers to review recent advances in medicine. The review of pro-time use was presented in this *Journal* coupled with a discussion of recent articles on anticoagulation in patients with atrial fibrillation.

Managed care and health care reform demand a much greater accountability regarding quality and challenge the existing tools to measure quality.[1,36-37] The quest for an improved QA system has lead health plans and the federal government to place more emphasis on outcomes studies, guidelines, patient satisfaction, and provider profiling. The major key in quality management is at the local level. The determinate of individual outcome hinges on the positive interaction of the patient and the local providers of care. The WCCHC has evolved a QA system designed to capture patient's short-term outcome data that has lead to modifying provider behavior and major changes in the health care delivery. The intentions are to have the clinical information system of WCCHC complement and integrate with the provider profiling of the major health plans who have more complete data on patient costs and long-term outcome. Data collection specifically intended to be used for quality measures expands the breath of information and enhances the accuracy over claims data or other system-wide uniform data tools similar to data used for research.[29] The QA program at WCCHC promises to improve quality through the sweeping changes occurring in health care today.

Table 1.—Process versus Outcomes

Process/Guidelines*	Outcomes
Steps of Physical Exam: Blood pressure, Thyroid, Cardiac, Pulses, Skin,	Short Term: Weight control Blood glucose control neuro
Laboratory: FBS,HbA1C, Lipid profile, UA, Thyroid functions	Intermediate term: Hospitalization Secondary complications Progression of complications
Eye Exam	
EKG	Long-term: Mortality
	Others:
Management Plan- Health Care Team used.	Risk factor reduction

*ADA,Diabetes Care 1989:12:365-68

Table 2.—Weight and Blood Glucose Control

	Patients With Diabetes		
	Average BldGlu (range)	Average Wt (range)	Average Age (range)
1989 Patients n=51	209 (114-511)	199 (103-332)	51 (20-82)
1990 Patients n=68	205 (45-387)	195 (89-313)	48 (18-79)
1989 Patients Lost to Follow-up n=17	245 (133-511)	202 (131-293)	46 (20-82)
1990 New Patients n=30	202 (45-354)	198 (89-313)	42 (18-79)

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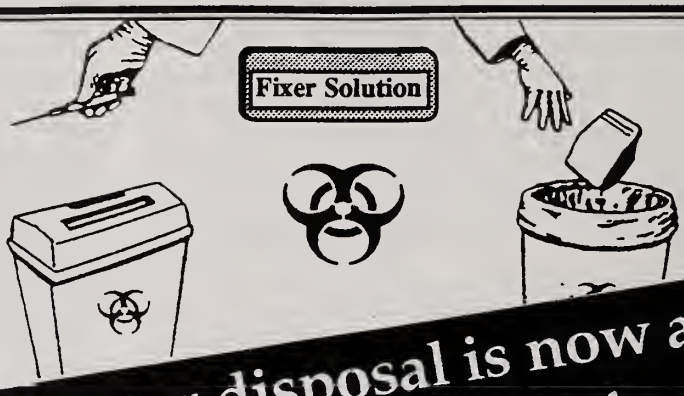
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News and Notes Henry N. Yokoyama MD

Life in These Parts

An elderly Filipino man with angina was prescribed nitroglycerin patches. Several weeks later, he appeared at the St Francis ER complaining of intolerable headaches.The internist on call saw the man with half a dozen nitroglycerin patches pasted on his forehead.The patient had reasoned that what helps his chest pains must be good for his headaches and kept adding the patches without getting any relief.

(Contributed by humorist/internist Gloria Madamba)

Intriguing License Plates

White Mercedes with: GRRR8
Tan Mercedes with: DERMIS
Gray Nissan Pathfinder with: 2 WICKD

Hawaiian Rent All Signs:

Rent Today—For It May Be Gone Tomorrow.
You Are Young Only Once—But May Remain Immature Forever.
An Effort A Day—Keeps Failure Away.

Paul Harvey KHVH Radio April 15, 1995

"Americans are paying this year in taxes, more than they pay for food, clothing, and housing combined."

Our Knight In Shining Armor

When a U of Washington epidemiologist announced that calcium channel blockers caused more heart attacks, every physician was being badgered by frantic patients. Along came our QMC chief of medicine, **Steve Wallach**, who declared that "the study was giving the drugs a bum rap. Every cardiologist has been swamped. We've been using these drugs for 15 years—and no one should stop their medicines without speaking to their physicians."

Bruce Psaty, the U of Washington epidemiologist, later explained in a letter that "the immediate risk of heart attack was low...If 1000 patients with hypertension are treated with beta blockers and diuretics for a year, 10 patients would be expected to have heart attacks...Our data suggests that if these patients were on calcium channel blockers, there might be 16 rather than 10 heart attacks...The immediate risk of a heart attack is low regardless of the type of therapy..."

Merger

On March 21, the Wilcox Health System and the Kauai Medical Group ended a four year negotiation by signing a letter of intent to form a partnership. Wilcox had acquired the West Kauai-based Garden Island Medical Group earlier and had been talking to independent physicians and others. Meanwhile KMG had been discussing a link with Straub. The parties now have a 90-day due diligence period to come up with a final agreement.

Expansion

Kaiser Permanente Medical Care Program has applied to SHPDA for approval of outpatient clinics in Waimea and Hilo. The Hilo facility will cost $7.9 million and the Waimea project more than $1.6 million. Both facilities will be operational by the end of the year. Kaiser presently has 290 physicians, one hospital and 12 clinics.

Quotables

"Allow this to pass and we'll start down the slippery slope on defining who is qualified to do what."

Rhoads Stevens, president of Hawaii Ophthalmologic Society, on the bill to allow optometrists to prescribe topical drugs.

The Great Aloha Run

On Feb 20, Washington's Birthday, eight heart transplant patients ran the 8.25 mile run. Race director **Jack Scaff** boasted: "They represent the largest number of transplant patients to participate in a sporting event in the country and possibly in the world." Jack hopes that the transplant patients will highlight the organ donor program. **Carlos Moreno**, director of St Francis Medical Center's cardiac transplant program commented: "We try to get the rest of the body to match the new heart through exercise." While the normal runner has a resting heart rate of 60/min and a running rate of 160 to 180 beats, the transplant patient has a resting rate of 100/min and a running rate only 10% to 20% more because of the surgical loss of parasympathetic and sympathetic systems which moderate heart rates.

Potpourri

Two old friends became philosophical after several drinks. "What would you do if you had only six months to live?" Peter asked Dennis. "I'd move in with my mother-in-law." Dennis replied without hesitation. "Good God, why?" Peter asked. "Because it'd be the longest six months of my entire life."

(Playboy Classic)

The judge was ready to give his decision on the alimony case pending before him. Fixing Mr Jones with a cold eye, he said, "I'm giving Mrs Jones $12,000 a year in alimony."

"That is nice of you, Your Honor," said Jones gratified. "And to show you I'm a sport, I will voluntarily give her $2,000 a year myself."

(From Assimov Laughs Again)

Alphonso and Gaston, long time friends, were walking jauntily down the boulevard together when Alphonso, turning pale, said, "*Mon dieu*, Gaston, coming toward us are my wife and my mistress arm-in-arm."

"What an enormous coincidence," said Gaston, "I was about to say the same thing."

(Another Assimov joke)

From the desk of Norman Goldstein, our editor

Kanaka Medical Dictionary

Artery	The study of paintings
Bacteria	Back door of the cafeteria
Barium	What doctors do when a patient dies
Bowel	A letter like a, e, i, o, or u
Cesarean section	A neighborhood in Rome
CAT Scan	Searching for the kitty
Cauterize	Had eye contact with her
Colic	A sheep dog
Coma	A punctuation mark
D & C	Where Washington is
Dilate	To live long
Enema	Not a friend
Fester	Quicker
Fibula	A small lie
Genital	Not a Jew
GI series	A soldier's ballgame
Hangnail	Coat hook
Impotent	Distinguished, well known
Labor pain	Getting hurt at work
Medical staff	A doctor's cane
Morbid	A higher offer
Nitrates	Cheaper than day rates
Node	Was aware of
Outpatient	A person who has fainted
Pap smear	A fatherhood test
Pelvis	A cousin of Elvis
Post-operative	Letter carrier
Recovery room	Place to do upholstery
Rectum	Dang near killed 'em
Secretion	Hiding something
Seizure	Roman emperor
Tablet	Small table
Terminal illness	Getting sick at the airport
Ultrasound	Good music
Urine	Opposite of *you're out*
Varicose	Nearby
Vein	Conceited

The Aloha Medical Mission

In the early 1960s, **Ernesto Espaldon**, a Barnes-trained plastic surgeon on Guam, visited Mindanao and was shocked by the primitive medical facilities to treat the poor. Ernesto and his anesthesiologist wife Leticia returned to the Philippines each year to provide no-cost treatment including corrective surgeries. The Aloha Medical Mission was born through their efforts in 1982 with a team of 7 physicians.

Today, the organization includes 370 volunteers from the U.S. and participants from 13 other countries as well. **Jorge Camara**, the mission spokesman, says the physicians include gynecologists, plastic surgeons, radiologists and even a lone pathologist, our friend **Arturo Salcedo**.

"Our compensation is in the smiles, their gratitude, and seeing how their lives have changed."

Today, 3,000 operations later, the Mission has treated 44,000 patients in four countries.

Ramon Sy, Aloha Medical Mission head, reports last year $500,000 worth of equipment was left behind and says modestly, "I would never have thought the mission would grow this large. Each year we get better at planning, and we just keep going."

Workers Compensation Bill

The Senate Ways and Means Committee approved on March 23 a proposal to cut workers compensation costs by 30%. It appears that Hawaii's medical fee schedule is 40% higher than the national average and the highest in the country. The bill bases the medical fee on Medicare fees plus 20% and requires physician referral for treatment by chiropractors, osteopaths, naturopaths, psychologists, optometrists and podiatrists.

A 1993 report shows that in a study of 1,000 Hawaii workers comp cases, chiropractors had the highest average medical cost per case. The average total chiropractor charge per case was $6,387 while the surgeon's average charge was $2,910. **Stan Michaels**, executive director of the Hawaii State Chiropractic Association, cried: "Foul—They needed a scapegoat." Stan points out that the doctors' treatment involved other costs such as hospitalization, prescription drugs, and diagnostic tests, whereas the chiropractors had no such additional charges.

A March 28 letter to the editor signed by **Calvin Kam**, co-chair of the HMA Workers Comp Committee and **Fred Holschuh**, HMA President better analyzes the situation:

"The Senate is considering legislation which purportedly will reduce workers compensation premiums by 45%. The reduction is to be accomplished by reducing the workers compensation medical fee schedule by 50%.

Decreasing the fee schedule would only have a minimal impact as medical costs comprising only 29% of the total workers compensation costs. Reducing the fee schedule is a Band-aid approach rather than a workable solution to a growing problem. In order to achieve real effective reform, other critical issues pertinent to the rising workers compensation costs must be addressed.

In order to control the rising workers compensation costs, the legislature must address other cost drivers of the system, including over-utilization and fraud. A recent study noted that chiropractors, psychologists, and attorneys may be responsible for much of Hawaii's soaring workers compensation costs.

The Hawaii Medical Association is concerned about the soaring costs. However, the current proposal will not effectively deal with the real problems while jeopardizing the availability of appropriate medical care for Hawaii's workers."

Hors De Combat

Samuel Pallin, a Sun City Arizona ophthalmologist, wants opthalmologists to acknowledge him as the inventor of no-stitch cataract surgery. Sam is suing some Vermont eye surgeons for patent infringement. If he wins, he plans to charge $5 for every no-stitch surgery done on the million Americans getting cataract surgery each year. **David Kurcher**, president of the Society of Cataract and Refractive Surgery says, "The ramifications of this boggle the mind."

Appointed, Elected and Honored

The Mental Health Association in Hawaii presented the 1994 awards to the following physicians:

Margaret Copi—Community Service Award
Neal Mazer—Family Advocacy Award

Kim Thorburn, medical director, Hawaii Dept. of Public Safety was awarded the American Correctional Health Services Association's 1995 Distinguished Service Award for her "unceasing campaign for the rights of prisoners not only in the U.S., but also worldwide through the Amnesty International board of directors. Kim is also the key author of the book, *Breach of Trust: Physician Participation in Executions in the U.S.*

Orthopod **John S. Smith** was named *Ke Kauka Pookela*, the outstanding physician for 1995 by Queen's Medical Center. The annual award recognizes someone "who provides the highest quality health care with aloha, integrity, efficiency and excellence."

Dermatologist **Richard W.M. Dang** who retired recently is slated to become Grand Master of the Grand Lodge of Hawaii. He will be the state's first Chinese head of the local Masons.

Potpourri II

Just a day after buying a parakeet, the owner was stunned when the bird suddenly fell off its perch and died. He returned to the pet store the next morning carrying the tiny carcass.

The store owner examined the body carefully. "Did it have a yellow stool?" he asked.

"No," the customer replied. "No furniture whatsoever."

(from Playboy's Party Jokes Apr 1995)

A man visiting a graveyard saw a tombstone that read: "Here lies John Kelly, a lawyer, and an honest man."

"How about that!" he exclaimed. "They've got three people buried in one grave."

(From Readers Digest Mar 1995)

Did you hear about the latest sport to have labor troubles? It seems the professional bowlers have been talking strike.

(contributed by C.A. Hazelwood)

Oncology Conference

Dennis Wachi presented the history of a 66-year-old man who has had recurrent GI bleeds from his gastric lymphoma. The patient had responded in the past to *Helicobacter* therapy. Bone marrow and CT scans were negative for mets.

Ken Sumida commented that *Helicobacter* therapy for low-grade lymphoma was impressive, but "the issue is still being investigated."

Kaye Kawahara elucidated: "We know antigens stimulate lymphomas. *Helicobacter* must be the antigen. By reducing the *Helicobacter*, the antigen, we produce *programmed cell death.* Moderator **Lois Mastrofrancesco** asked innocently: "Are all lymphomas due to *Helicobacter*?" Ken replied: "Only low grade lymphomas. But every case should be screened for *Helicobacter.*" Lois quizzed, "How do we test for *Helicobacter*?" Pathologist **Larry McCarthy** explained, "We often see it on H & E stain. There are special stains available. Also there are IgM and IgG serological tests." The surgical resident commented: "The irradiation rate is around 75% with antibiotic therapy." Lois: "Which therapy should we use?" Kaye: "It is a judgment call. *Helicobacter* therapy is not standard treatment for low grade lymphomas. There are other chemotherapeutic modalities." Radiotherapist Lois: "Radiation is also an option. So we have a situation—chemotherapy, radiation, or antibiotic therapy. Should we institute a study protocol? Do we have enough cases?"

Lois later commented: "The patient, I understand, smokes marijuana?"

Ken: "Marijuana has been on the market for more than 5 years as an antiemetic and an appetite stimulant."

Dennis: "My patient is originally from_____ and he swears that you can't compare it with Hawaiian marijuana for quality."

Physician Moves

February.—Marvin Royce, 71, who practiced general medicine in Kona for 21 years retired. Marvin was the only physician at the bloody Pork Chop Hill battle in Korea in June 1953.

March.—Allergist **John McDonnell** opened a satellite office in Kailua at Kailua Professional Center, 40 Aulike St, Ste 311.

Internist **Gordon F.H. Liu** retired effective Mar 31 and **Inam Rahman** assumed his office and practice at 2228 Liliha, Ste 207.

Plastic surgeon **Gregory Caputy**, an MD-PhD, joined **Leabert Fernendez** at Ste 409, One Kapiolani Blvd.

Internist-oncologist **Carl M. Higuchi**, former researcher with the Cancer Research Center, started his private practice at Kapiolani Medical Center, Pali Momi, Ste 350 and at St Francis-Liliha. Carl's special research was in colon-rectal

➤ *News & Notes*
(Continued on next page)

➤ *News & Notes*
(Continued from page 558)

cancer screening tests.

Ophthalmologist **Tyrie Lee Hiller** (formerly with the Honolulu Medical Group) announced a name change to **Tyrie Lee Jenkins** and an office change to 1060 Young St, Ste 216.

Hana, Maui's lone physician, **Michelle Taube** is leaving after 3 years. The toll on her private life (Michelle has two children) ie, being on-call 24-hours a day with no days off, became too much.

Side Effects of Medicines

(A Walter K.W. Young contribution)

At a meeting of physicians and attorneys, the subject of discussing *all possible side effects* of any medication came up. This incident prompted us to ponder the possible side effects of *hydrogenated oxygen*. It may be difficult getting FDA approval and discussing its side effects with patients. With this in mind, we drew up the following list of possible side effects of hydrogenated oxygen:

electrolyte imbalance	irregular heartbeat
choking	drowning
insomnia	enuresis
frequent urination	bloating
abdominal fullness	vomiting
excessive salivation	diarrhea
swelling of feet	generalized swelling
dizziness	disorientation
scalds	frostbite
trench foot	water intoxication
hypothermia	death
hemolysis	

Despite all of the risks noted above, we still use water.

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HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
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Office Space

Sports medicine and orthopedic surgical practice.—Willing to share office space at Queen's POB 1 and Pali Momi POB. Complete staff, managerial system, radiology, and physical therapy svcs available. Call Diane Fong, 536-4992, M-W-F or 487-7231 T-Th.

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Medical office in Haleiwa.— Ideal for orthopedic, gynecologist, pediatrics, etc. Take all or share space, to serve 18,000 people on the North Shore. Ground floor $2306/month gross, 1069 sf, 637-6239.[5]

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For Sale

Office and minor surgery equipment on Maui.— Exam tables, desks, chairs, 2 line speakerphones, sutures, sterile gloves (size 7), autoclave, ace wraps, syringes and needles, etc. Low prices, must sell now. Call 244-5334 M-F mornings, 572-6880 evenings and weekends.



"Whenever I have the urge to get married, I come here until it passes."

The Weathervane R. T. Stodd, MD

Before everything changed, it was all different.

The claim is being made by some economists that victory is in sight for controlling health care costs. Consultants say surging enrollment in managed care programs has caused the first-ever decline in average yearly cost per employee—a 1.1% drop. In recent years, annual employer costs have jumped as much as 18%, so the 1994 decrease is a stunning reversal. However, other experts discount this as a major turnaround and say 1994 represents a shift to low-cost HMOs and once stabilized, costs will rise again. The point is made that the medical technology pipeline is rich in breakthroughs in expensive pharmaceuticals and equipment. These mechanisms, expensive by themselves, will prolong life and sometimes turn acute fatal illnesses to chronic diseases, thereby forcing expenditures to climb.

Never attribute to lethargy that which is adequately explained by stupidity.

Trusopt (dorzolamide) is the name of the topical carbonic anydrase inhibitor (CAI) ophthalmologists have been anticipating for glaucoma patients for the past 30 years. The compound, manufactured by Merck, has excellent ocular penetration and is said to be the most potent and effective CAI. It is safer due to lack of unpleasant systemic effects and has been approved for marketing by the FDA since December 1994. The IOP-lowering effect was found to be 3 to 5 mm Hg throughout the day. So this valuable therapeutic agent is here, but don't write any prescriptions today. The bizarre fact is that while Trusopt was approved by the FDA, it remains unavailable, tied up in the Merck marketing and packaging division! Only an enormous pharmaceutical company could afford to be so casual about marketing an immediate bestseller.

When things are going well, something will go wrong.

The U.S. House of Representatives voted to limit damage awards in medical and product liability suits, in what is called the biggest AMA legislative victory in decades. The measures would impose the following uniform standards:

1. Limit punitive damages in all state and federal suits, including medical malpractice to civil rights cases, to $250,000 or three times the amount of economic loss, whichever is greater. 2. Abolish joint and several liability for noneconomic damages. 3. Shield drugs and medical devices approved by the FDA from punitive damage awards. 4. Prohibit suits for injuries from a product manufactured and sold more than 15 years ago.

While the above are beautiful music to the industrious working people of America, we can be certain the trial lawyers (who heavily supported the election campaign for the President) will lobby with mighty resources in the Senate. Still, the House action indicates that Congress is painfully aware of the monstrous damage our legal system continues to inflict on American industry, creativity, ambition, and competition in both domestic and world markets.

Watch for potholes in the information superhighway.

Last year Dr Theodore Munsat, a neurologist at Tufts Medical Center, recommended that a few patients with amyotrophic lateral sclerosis (ALS) begin a trial with Neurontin, a new drug that is FDA approved for the treatment of epilepsy. A sister of one of the patients in the study shared the information on Prodigy, one of the major on-line computer services. Shortly thereafter doctors around the country received requests for prescriptions of Neurontin from desperate patients with ALS. Most patients with ALS die in two to five years, so one can understand the urgency. It is estimated that at least one-third of the 30,000 ALS patients in America now are taking the drug.

When your work speaks for itself, don't interrupt.

Robin Cook, onetime ophthalmologist now author, has written a medical mystery titled *Fatal Cure*. The book is an entertaining read, but in addition makes a strong statement against business managing medical care. When doctors become employees of the hospital or group together to manipulate how medical care is to be equated with dollars, bad things can happen to patients.

Fashions fade—style is eternal.

In an attempt to establish a nationwide vision care plan, the American Academy of Ophthalmology has joined with LensCrafters to provide a vision care preferred provider network. With 485 U.S. outlets, LensCrafters is the world leader in the optical retail market. The AAO represents 21,000 ophthalmologists, so the combination will yield a powerful marketing tool. Are you old enough to recall when optical dispensing was considered ethically questionable?

A little bull will go a long way.

Forget about the value of the dollar against foreign currencies, many economists use the PPP theory (purchasing power parity), and the benchmark is the Big Mac! With 15,000 McDonald outlets worldwide, the price of the popular Big Mac measures theoretical values of currency wherever fast food junkies line up. Thus, the average U.S. price of $1.90 when compared with the *Biggu Macku* at $4.23 in Japan indicates that the yen is wildly overpriced.

A half truth is a whole lie.

You surely heard about the surgeon in Tampa who amputated the wrong leg while the patient was under general anesthesia. What a great news story, especially when Congress is considering malpractice legislation. ABC news, *Newsweek*, Associated Press, Ralph Nader slavering on CNN, all were delighted to attack such irresponsible medical care. The hospital promptly acknowledged the error and said it was miserably sorry. Wait, there is more. The patient had severe diabetic atherosclerosis and was losing both legs, the left (amputated) worse than the right. The patient wanted the right leg removed first because it was more painful, but in the OR the surgeon mistakenly amputated the leg that appeared worse, with 90% vascular occlusion. But hey, if you tell that part, the story becomes dull.

Addenda

- Politics is an excellent career, unless you get caught.
- Cab drivers are living proof that practice does not make perfect.

Aloha and keep the faith—rts

■

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Twenty years ago, when commercial carriers abandoned the medical professional liability insurance market, MIEC was formed by northern California medical societies and a group of pioneering physicians. When this liability insurance crisis spread to Hawaii, the Hawaii Medical Association agreed that physicians should participate in their own professional liability insurance company. With HMA support and sponsorship, MIEC was licensed in Hawaii and has provided protection for its physicians since 1981.

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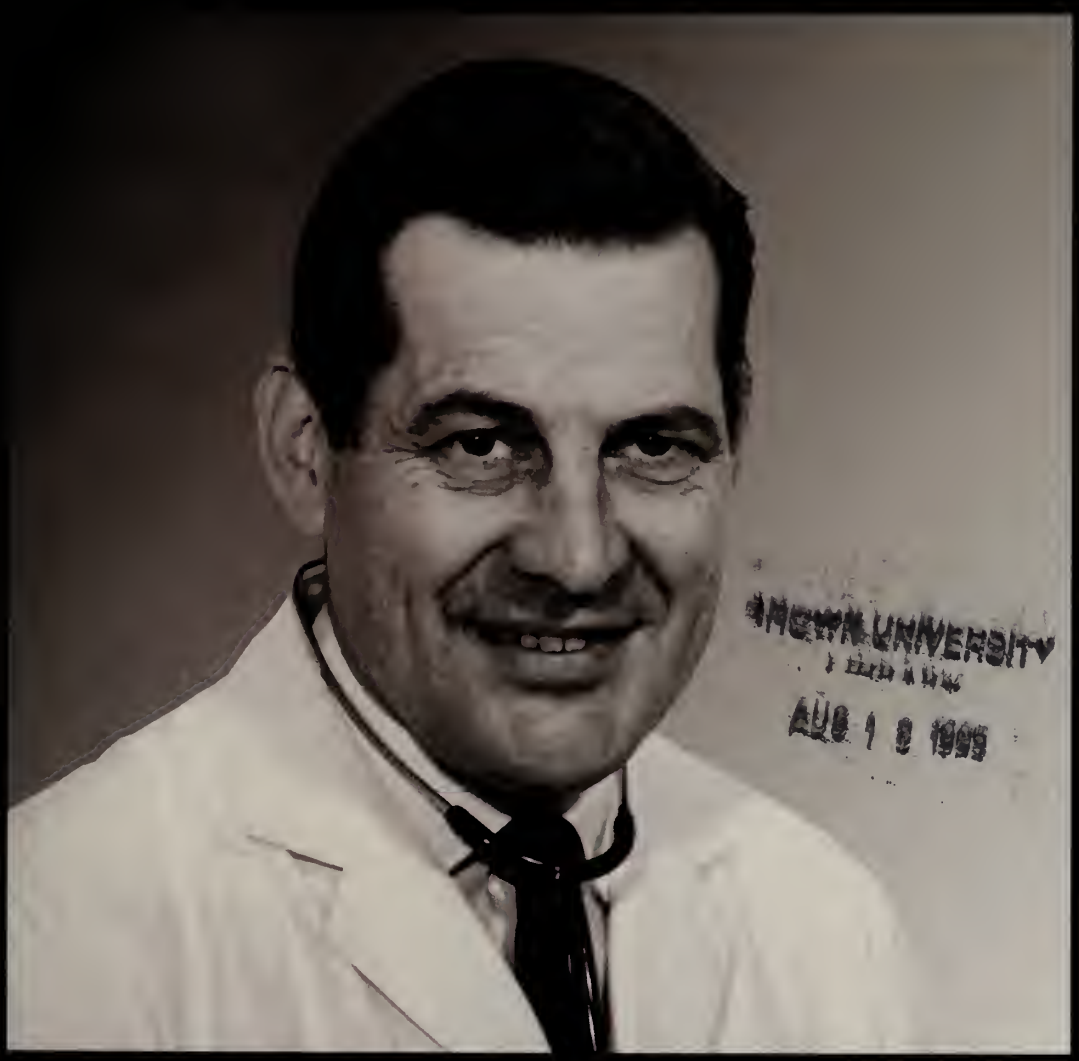
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HAWAII MEDICAL JOURNAL

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Festschrift: In Memory of Fred I. Gilbert, Jr, MD

‘Oni kalalea ke ku a ka la‘au loa.

(‘A tall tree stands above the others’)



It was a tribute from the heart, this saying of the ancient Hawaiians, and it was reserved for a person of outstanding achievements. Such a man as Dr. Fred Gilbert.

His list of accomplishments was staggering: professor of medicine, clinical researcher, medical director, community health pioneer for Hawaii’s people, recipient of numerous fellowships and awards, teacher, healer and friend as well as physician to his patients. Not to mention loving husband and father of eight children, environmentalist, and in his spare time, coffee grower, tennis buff and fisherman.

Dr. Gilbert believed that each patient is an individual, and not the end product of a health delivery system. His patients sensed this caring, and in responding have given the most fitting accolade of all: if the true measure of a man is not how much he loved, but how much he was loved by others, Dr. Fred Gilbert stood very tall indeed.

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Editorial Norman Goldstein MD

Festschrift for Dr Fred I. Gilbert, Jr

When Dr Bob Nordyke first called to suggest that the *Hawaii Medical Journal* publish a festschrift to honor Dr Fred Gilbert, I said, "Yes, Bob, let's do it now—as soon as we can, depending on our publication schedule."

Fred was then a patient in Straub Hospital, the clinic and hospital in which he spent so many years as a driving force, a major mover—in nuclear medicine, community medicine, internal medicine, and so many areas of research via the Pacific Health Research Institute.

Bob Nordyke did a yeoman's job in putting together this festschrift—but Fred Gilbert left us before we could publish it. This special issue festschrift will remain a tribute to a very special man for his family, his friends, and associates to honor all he has done for medicine in Hawaii.

Highlights of the Exemplary Career of Fred I. Gilbert, Jr, MD, FACP

Research

As medical director since 1960 of the Pacific Health Research Institute (PHRI), he was responsible for more than 400 research projects totaling $16 million. He trained more than 300 students to do medical research and provided funds for dozens of scholars to work on projects throughout the community. Dr Gilbert authored or co-authored 75 articles published in major medical journals—all the while carrying on a busy practice of medicine, teaching at the University Schools of Medicine and Public Health, and being actively involved in many organizations.

His special interest focused on health services research looking for ways to improve how health care is practiced. To follow are projects that interested him most and in which he was the primary catalyst.

1963 to 1975.—An automated multiphasic health testing system (Health Appraisal Center) at Straub Clinic. The Hawaii Carrell system designed by Dr Gilbert for more efficient periodic examinations of apparently well people is now used in medical centers throughout the world, with 27 in Japan.

1967 to 1975.—Study of Drugs and Coronary Heart Disease. A large, federally funded study that demonstrated that certain drugs commonly used did more harm than good, forcing their discontinuation.

1971 to 1973.—Use of Allied Health Personnel in Management of Chronic Diseases. 12 nurse-managed, doctor-supervised clinics were started and funded by Dr Gilbert within Straub Clinic, including thyroid, diabetes, gout, family planning, hypertension and multiple diseases.

1974 to 1984.—Breast Cancer Detection Demonstration Project, a cooperative study of the National Cancer Institute. In Hawaii, Dr Gilbert's group screened 10,000 asymptomatic women by palpation, x-ray mammography, and ultrasound annually for 10 years, finding 190 patients with early cancer in the more curable stages. He was able to bring the first mammography units to Hawaii to continue to provide mammography screening.

1989 to 1993.—Hawaii Quality and Cost Consortium. Funded by a grant from the Robert E. Black Memorial Trust for $240,000, the aim of this project was to establish quality standards relating to the outcome of health care. More than 80% of the state's hospitals participated.

1992 to 2008.—Prostate, Lung, Colorectal and Ovarian Cancer (PLCO). Through Dr Gilbert's efforts, PHRI became one of 10 centers throughout the U.S. funded by the National Cancer Institute's Federal Agency for Health Care Policy and Research to determine cost-effectiveness of various health care delivery systems for Asian and Pacific minority populations in Hawaii. It combines research with training and technical assistance and dissemination.

1992 to 1995—Hawaii Asian Pacific Island MEDTEP Research Center. One of 11 centers in the U.S. funded by the National Cancer Institute.

Honors

For his work, concern, and innovations to improve the welfare of patients in Hawaii and beyond, Dr Fred Gilbert was honored in 1978 as one of only three physicians in Hawaii ever elected to the prestigious Institute of Medicine. In 1985, he was awarded the title Distinguished Practitioner in the National Academies of Practice; the 1987 Hawaii Medical Association's Physician of the Year; the 1987 Annual Recognition Award of the Hawaii Chapter, American Society of Internal Medicine; the 1988 Straub Foundation's Milnor Award for Professional Excellence; the 1989 Laureate Award of the Hawaii Chapter, American College of Physicians. Dr Gilbert also received many awards for excellence in publication and research from the Straub Clinic & Hospital.

Thanks to Dr Bob Nordyke's suggestion and assistance, we have this festschrift honoring Dr Fred Ivan Gilbert, Jr (1920-1995).

HMA President's Message

Frederick C. Holschuh MD

Dr Fred Gilbert had been a member of the Hawaii Medical Association since 1950, and we will miss him immensely. He was a strong and innovative leader who never hesitated to recommend ways that HMA could set goals and be active in the community and nationally. He was the 1987 HMA Physician of the Year, he supported the *Hawaii Medical Journal* and advocated it as a venue to promoting research and teaching medicine in our state, he was published often in the *Journal*, and he served on some 26 HMA committees.

I remember him well from my days as house staff at Queen's Medical Center in the 1960s. Fred was constantly challenging himself and us. In time, many of Fred Gilbert's early visions and ideas have become accepted practice.

We offer our condolences to Gayle and the Gilbert family. To a fine physician and an outstanding member of our community we sadly say *aloha pumehana*.

Our appreciation and admiration to

Fred I. Gilbert, Jr, MD, FACP
Laureate, American College of Physicians, Hawaii Chapter 1989

"I cannot rest from travel; I will drink
Life to the lees..."

"I am a part of all that I have met;
Yet all experience is an arch wherethrough
Gleams that untraveled world whose margin fades
Forever and forever when I move.
How dull it is to pause, to make an end,
To rust unburnished, not to shine in use!
As though to breath were life! Life piled on life
Were all too little, and of one to me
Little remains; but every hour is saved
From that eternal silence, something more,
A bringer of new things; and vile it were
For some three suns to store and hoard myself,
And this grey spirit yearning in desire
To follow knowledge like a sinking star,
Beyond the utmost bound of human thought...".

"Come, my friends,
'Tis not too late to seek a newer world.
Push off, and sitting well in order smite
The sounding furrows; for my purpose holds
To sail beyond the sunset, and the baths
Of all the western stars, until I die..."

"Though much is taken, much abides; and though
We are not now that strength which in old days
Moved earth and heaven, that which we are, we are–
One equal temper of heroic hearts,
Made weak by time and fate, but strong in will
To strive, to seek, to find, and not to yield."

***Excerpted from* Ulysses, *by* Alfred, Lord Tennyson.**

Memorial Service

Remarks by Robert A. Nordyke MD



Vacationing at Lake Tahoe with Bob Nordyke, 1990

It is difficult to condense into a few moments a man of the depth, breadth, and range of Fred Gilbert. I met Fred for the first time in 1940 when we took a course in nuclear physics together at the University of California at Berkeley. For the last 35 years, I've had the privilege of working as a close friend and colleague of his in medical practice and research. During this time I have observed his prodigious energy, his broad-ranging mind, his bulldog tenacity, and his probing insights.

What were some of the elements of Dr Gilbert's character and mind that combined to make him so effective in improving the health and social landscape of Hawaii?

One was simple hard work. Everything he set out to do was accomplished with dogged persistence and self-assurance. He applied the same energy if he was caring for an individual patient, building a lava rock wall, farming coffee, tuning his motorcycle, crafting a koa table, or writing a million-dollar federal grant. If Fred took the responsibility for a job, it would always be completed, beyond expectations.

Another element of his character was fierce competitiveness, whether playing tennis despite a congenital hip, winning the Waikiki rough-water swim for his age group, racing three and a half days around Oahu on a surfboard, sliding the high surf at Makaha, or beating out Stanford and Mayo Clinic for a grant award. But I have never known his competitiveness to be self-serving. Always his goal was to bring the community together, to build consortiums, to accomplish collectively what couldn't be done by the parts alone. His purpose and accomplishment was to improve the system in the patient's favor.

Fred's generosity, too, was legend. One example—he placed his entire salary from the Pacific Health Research Institute into a trust fund to ensure staff continuance if outside research support didn't materialize. It provided reassurance, and the staff responded with unbounded loyalty.

What were the elements of his philosophy that made him so lastingly effective?

First, long-term vision. He recognized deficiencies in health care, then initiated programs to improve them through the Pacific Health Research Institute that he helped found and for which he served as medical director for 32 years. One example is mammography. He screened 10,000 women over a five-year period, found 190 patients with early cancer in its most curable stages, and gave mammographic instruments to three hospitals with the agreement that they continue to provide low-cost mammograms.

Another example of long-term vision: In 1992 he set up a community screening program for prostate, lung, colorectal and ovarian cancers (PLCO) that will continue for 14 more years. He wished he had the longevity of his 100-year-old mother so he could carry the project through to its completion, but already many unsuspected early cancers have been found and treated.

Another element of Fred's philosophy was the need for major innovations. He believed we practice medicine almost the same as our grandfathers except for some technological improvements. To rectify this, he undertook his own new leaps of vision. In the 1960s he developed a new type of computerized health testing system now copied across the world and started a series of nurse-managed chronic disease clinics. More recently he designed an outpatient system that uses new mixes of personnel and technology, and gathered together a group of hospitals to analyze and improve their quality.

Fred felt a deep concern for the well-being of each of his patients. Many of you chose him as your physician because you knew his medical expertise and how sincerely interested he was in *you*. But many of you may not know how widely his concern extended beyond the individual patient into the community to those persons who were not under anybody's care, and to the root social causes of many health problems—poverty, crime, drugs, inadequate housing—that physicians often feel are beyond their responsibilities.

Despite being on the front line of social thought and technology, Dr Gilbert's most typical pose was as a *craggly*-headed, thoughtful physician at the bedside, chin in hand, often late to the next appointment, but with unlimited time and intense concern about whatever problem was directly in front of him.

He was proud of his century-old mother, his wife, his 9 children, his 10 grandchildren, and his brother who were all so much a part of his life. He loved life. There was so much to do!

Another Scandinavian, Gunnar Myrdal, wrote:

> Not merely to save the world, but primarily to save our souls there should be dreamers, planners, and fighters in our midst who take upon themselves the important social function of raising our sights...

These words describe Fred Gilbert—a dreamer and doer who has managed to raise our sights while enriching so many lives.

Remarks by Herb C. Cornuelle

What strikes me most about Fred Gilbert's life was its wide and ever-expanding diversity. His interests and causes covered an astonishing spectrum: Always at the base was his allegiance to his family and his profession. He saw his calling to be practicing medicine at Straub. As the years went by he became a pioneer in community medicine and research in Hawaii.

Along the way Fred Gilbert demonstrated an eclectic set of avocations. In the late 1930s he played trumpet with the "Kings of Rhythm." He built rock walls—endlessly. He became a



Herb C. Cornuelle

pro-active environmentalist to preserve his family land in Oroville. He owned and rode a not-politically-correct motorcycle. He played tennis without realizing he had a handicap. He grew and sold Kona coffee. He was a Forty-Niner fan. He was a relentless rough-water swimmer. He fished off the shores of Milolii.

I'm sure every reader of these words could add some surprises to this list.

To each of these causes, interests and hobbies, Fred brought a formidable set of traits and principles:

- He gave the whole of his attention to the people he was working with, or working for.
- To each activity he brought all of his commitment, skills and resources, along with his energy, and enthusiasm. With Fred it was always the whole nine yards.
- He was an honest-to-goodness leader, who had that rare but classy attribute of leadership: He was predictable to his colleagues. No one needed to guess where Fred was coming from.

 Similarly, he was forthright, sometimes testing the limits of candor. He was unrestrained, particularly putting his point of view across.
- He was resolute, to put it mildly. He had an immutable determination and sense of purpose.

And, finally, Fred Gilbert clearly derived great joy from his profession, his avocations, his family, and his friends. His cheerfulness and joy in doing was contagious, which enabled him to get many of us to do things we really didn't want to do right then.

I, for one, will always be grateful to Fred Gilbert for his example and his friendship.

Remarks by Blake E. Waterhouse MD

I am deeply honored to respond on behalf of Straub Clinic & Hospital on the occasion of celebrating the life of Dr Fred I. Gilbert, Jr, who served here for a remarkable 44 years, providing a *compass* for our past, present, and future professional activities.

Dr Gilbert's father was in the military and the family moved frequently. Fred grew up in the Sierra foothills near Oroville, California, attended high school in Philadelphia, and completed high school in San Francisco. He attended the University of Hawaii for two years and earned his Bachelor of Science degree from the University of California, Berkeley, in 1942; his medical degree from Stanford University in 1945.

After serving in the military, Fred returned to San Francisco for a surgical internship and his medical residency. He then worked and taught at Stanford until 1951 when he left to join Straub. In addition to his career at Straub, Dr Gilbert also founded Pacific Health Research Institute (PHRI) in 1960 and served as its medical director for 32 years.

The honors, fellowships, and awards he received, the positions held, and the papers he published number in the hundreds. To mention just a few, he was selected for membership in the



Building lava rock walls with Blake Waterhouse

prestigious National Academy of Sciences Institute of Medicine, voted HMA Physician of the Year, received Straub Foundation and PHRI top research awards on many occasions, and was both a Fellow and Laureate of the American College of Physicians. Suffice it to say that Dr Gilbert received the highest honors and awards for every facet of his professional activity throughout his career.

Over the years of his practice, Dr Gilbert came to exemplify the highest and best of our profession. He was known as a compassionate and caring physician and as a person who loved his patients, his staff and colleagues, and this land of Hawaii and its people. He was enormously skilled as both a clinician and a clinical researcher, as demonstrated by his multiple awards and accolades. He provided outstanding leadership during every phase of his career, and his honors and the positions he held reflect the esteem in which his leadership was held. He was a mentor to all of us, both as a physician and as a person. He reflected the highest professionalism in terms of what it means to practice, teach and do research, all in the pursuit of excellence in patient care. In addition, he reflected to us what it means to be involved in the community, in professional societies and in legislative matters. And, characteristically, he continued to mentor us in how to face death.

About one month prior to his death, soon after his incurable malignancy had been diagnosed, Dr Gilbert left his fellow physicians a voice mail message. The essence of the message was a clinical summary of his problem, a description of the poor prognosis, and the short time he would have left with us. He concluded with an expression of his affection for Straub and his love for all his colleagues. It was riveting and moving to all of us.

At our subsequent monthly physician meeting, I referred to a passage from a book, *The Earth is Not a Resting Place*, the title of which I thought personified Fred. He was never known to be resting on his oars, but was always totally engaged, extensively involved, always in the fray and never on the sidelines as a spectator of life.

Each of us will have our own unique ways to describe Dr Gilbert. I would like to use three descriptors as I remember him.

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• Boundary-spanner.—Dr Gilbert understood and appreciated the interconnectedness of so many disciplines and events—history, society, science, the arts and so many others—and integrated this knowledge in an uncanny fashion. He was one of those unusual people who was able both to create the vision and to move it to reality. He was both a dreamer and a doer.

• Irreverent.—Fred's irreverent streak was directed primarily toward conventional wisdom, the establishment, and titles. He combined this irreverence with a keen intellectual curiosity and a challenging mind, all of which made him the outstanding clinician and researcher he was.

• Outrageous.—Fred used his outrageous nature in a most purposeful and effective fashion. Often, he would ask me to respond to something he had said, written or done. When I answered that it was not only pushing the envelope, it was beyond the pale, his usual response was that he was pleased to hear me say that because that's exactly what he had intended! He elevated outrageousness to an art form. Fred's family posted the poem "Perfection Wasted" by John Updike in his room during his final hospitalization. A portion of it read:

> And another regrettable thing about death is the ceasing of your own brand of magic, which took a whole life to develop and market—the quips, the witticisms...The jokes over the phone. The memories packed in the rapid-access file. The whole act. Who will do it again? No one. Imitators and descendants are not the same.

I certainly concur that no imitators or pretenders will follow Fred Gilbert. On a personal note, I will think of Fred when I need an extra dose of wisdom or optimism or fortitude. I will think of Fred when (on those increasingly rare occasions) I turn a double play or hit a three-point jump shot, because Fred always understood the importance of (and encouraged) that kind of frivolous diversion. And I will think of Fred when the Hawaiian sun is warm, the surf is powerful, and the gentle trade winds blow. In conclusion, it has been a privilege to know Fred, a privilege to love Fred. And it is a very special privilege—one that all of us have shared—to have been loved by Fred. Thank God for the gift of Dr Fred Gilbert.

Remarks by Fred Ivan "Gil" Gilbert, III

• Camping out on Goat Island on the wind-swept coast of Laie. Traveling the eel-infested reef to shore in the dark, driving rain at five in the morning.

• Watching Kilauea Iki erupt. Getting up at four in the morning and driving through the darkness, expecting at each turn to encounter a river of lava, and then thrilling at the awesome display of the final spectacle, an enormous fountain of fire so hot you could barely stand to look at it.

• Surfing Makaha on Monday mornings, but always back in time to put in a full day at the office.

• Spending weekends at George and Bobbi Mills. Getting up in the early morning chill at the crack of dawn and heading out to pull in the lobster and fish nets. Watching the Punaluu coastline at sunrise from a small boat. Afterward sharing two days of Hawaiian music, fresh-cooked fish, volleyball, and a few beers.

• Taking Sunday drives in the old Chevy *woody* station wagon. Dad would pile the kids in and go *holo holo*, wandering aimlessly, driving around the back roads of Hawaii looking for a *kapu* sign to violate, with perhaps some unexplored surprises beyond it.



Gil Gilbert with his daughter Maya

• Hiking in places like Kokee, Aiea, and Palehua. Dad with his pack of kids, usually carrying Lisa or Cara (the youngest) the whole five mile distance of the hike.

• Laughing hysterically over Phil Silvers, AKA "Sergeant Bilko" on Friday nights.

• Getting everyone together and heading up to Mort and Dorothy Berk's on Tantalus to watch the New Year's fireworks from their roof.

• Traveling on our first trip to Europe. With adventures through France, England, Spain, Portugal, and Switzerland. We who were used to sparse clothing, bare feet, *see moi* and boiled peanuts, now found ourselves abroad in proper boarding schools which required formal uniforms. Upon our return to Hawaii a year later, he stopped the car on the last turn just before our house and let us run the final distance home.

• Our dad refused to become a member of the Pacific Club or the Oahu Country Club because he disapproved of the selective admission requirements. He would often prefer the company of surfers Rabbit Kekai or Buffalo.

• Fred Ivan Gilbert Jr, our father, imparted to us his strange brand of independence, his love of Hawaii, his unique intelligence, his love of adventure, and his slightly askew sense of humor. He saw each day as a privilege not to be taken for granted.

Not only did we come to love Hawaii and its unique beauty and spirit, we developed a sense of responsibility and respect for the world in which we live.

I think I speak for all of us kids in saying that our father had a quality that seemed larger than life itself. For many of us, it's hard to believe that he is gone.

My father loved to build rock walls. As long as I can remember, he was always finding a place to build a rock wall. It is something I could never understand. Shortly after he had married Gayle, her son John asked what the deal was with Dr Gilbert and his rock walls. I think anyone who got to know my father well would eventually get roped into building a rock wall with him. Perhaps he felt that if you could build a proper rock wall, everything else might just fall into place.

I also want to thank everyone for coming today. I think my father would think that it was completely unnecessary and a waste of time. It would make more sense to be out and doing some yard work or something.

I had a chance to talk to my father after he had been diagnosed with terminal cancer, and after his first operation. He told me at that time that he was ready to die, and that he was a happy man.

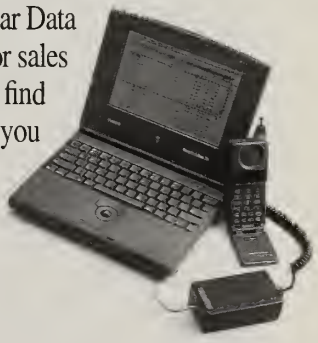
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HEALTH

Essay

by a patient for a UH English class

This essay was found among Fred Gilbert's papers. It was written by a young patient with juvenile diabetes who died from her illness in 1983.

My Guardian Angel

"Bonnie, may I call an ambulance?" As Mother asked, I was suddenly startled to realize how long she had waited to do so.

"Okay," I mumbled weakly, but as she left the room my head suddenly cleared, my voice gained strength, and I yelled after her, "but get me admitted under Fred!"

As I slipped back into unconsciousness I think I heard a groan from the living room.

Fred is my guardian angel. He has been practicing medicine in Hawaii for more than 27 years. Probably longer, but he has taken care of me for 27, so that is all I can accurately vouch for. But who and what is Fred that makes me turn to him in times of need? I have pondered this more and more often lately.

There is a quality about Fred that is difficult to get my hands and mind on. It is more of a feeling-sensing thing. Fred *knows* me, I mean really knows me. Not just the physical body stuff, but whatever else it is that makes me *me*. Recently Fred, although not the doctor of record, suggested psychiatric consultations because I was not responding *normally*. I only learned it was his suggestion weeks later, as the physician of record passed it off as his own.

I remember one incident back in the middle 1960s. I was in the examining room, feeling miserable. I obviously had a severe bronchial condition, fever, coughing, and just feeling generally awful. Fred stood studying my chart, rifling the pages. Then he'd turn and look intently at me. He repeated this several times, not saying anything, just studying first the chart and then me. When he looked at me, his usually twinkling eyes were dark, somber pools and they seemed to burn right into me. Finally he announced, "I want to do a urinalysis. I think you have a kidney infection."

I was startled as I had no symptoms to indicate that. My lungs were horribly congested; I coughed convulsively and had a fever. From previous experience I knew it was a bronchial condition. Well, it was that, but when the lab results came down, I also had a raging kidney infection! I have often wondered if Fred employed iridology or is simply psychic. I opt for the latter.

Fred has always had time for me. Even when he is busy he has time. If it is two minutes then he is totally, mentally as well as physically, with me for those two minutes and they seem like 20. But frequently he gives me hours. I remember once, in 1978, while hospitalized for another condition, I suddenly went blind. Fred spent almost an hour, and almost every day while this situation existed, with me. Always talking quietly, he would tell me that there were ways of working it out, that I could continue to live alone if that's what I wanted to do. He told me of support systems that I could tap into and worked out how a multitude of daily tasks could be handled. He was there, totally, and those hours were very important because they laid the groundwork for what was to come later. The blindness was reversed for the time being, but one year later, almost to the day, it was upon me again. Because of Fred, his caring and his time, I was mentally able to tap in, get my physical needs met, and today, more than two-and-a-half years later, I still live alone.

Another time, while I was again in the hospital, I asked a question and Fred sat down to explain acidosis to me, a negative diabetic condition. He sat there for what seemed like hours and talked to me in very scientific terms. But then he always did. It is something that amuses, pleases, and puzzles me. From my teens, Fred has explained things to me as though I were another doctor, and he seems to believe and expect that I understand what he is saying. I may not remember the details, and almost none of the words, but I almost always have an inner, nonintellectual understanding of the process and am able to apply this knowledge in my life.

A natural teacher, Fred is now lecturing at the local medical school. I have never been sure how he did it, but Fred taught me to think for myself. My understanding of my diabetic condition, what was going on, and what could be done to effectively correct certain situations used to anger other doctors. Fred is the only doctor I have ever gone to who has an ego that can handle not always being boss or the learned professional. He never gave me any orders or told me that I *had* to do or not do anything. He was and is always quiet and unassuming, nonjudgmental, and it seems, always smiling.

Except for one time that I can remember, and even then I'm not sure. During a very long hospitalization, my veins had been very badly overworked by blood testing. There were several doctors on the case, each one doing his own thing. One of them was on a real ego trip—insisting on being boss, very demanding, almost cruel. This doctor barged into my room one day while Fred was there and, interrupting the existing conversation, demanded to know when I would allow the IVs back into my veins. My mind went blank and all I could do was stare at him. IVs and blood tests had always been very traumatic for me, and for me now to give voluntary permission was something my emotional mental body could not deal with, especially after just completing a solid 18 days hooked up to little glass bottles. The doctor stomped out after I had explained all this. This doctor was also doing daily blood tests, sometimes twice a day, and Fred had been getting occasional blood sugars. Very inconspicuously Fred managed to let me know that he was canceling all blood work. I'm just not sure how he imparted this to me because he did not come right out and say anything about it. Anyway, when the lab technician entered my room the next morning I was quite unprepared. Later in the morning when the results should have been back, I pushed the intercom button and asked for the results. Simultaneously, through my open door, and being right next to the nurses' station, I heard Fred's voice as he greeted a nurse. He had to have heard my question. The nurse told me the results were not back yet. I could hear low but intense talking and knew that Fred was one of the participants. After what seemed like forever, I pushed the button, repeated my question, and was told that no blood sugar had been run that day. Shortly after that Fred left the floor. He did not come in that day. I think he was very angry. After that the blood tests did stop and the other doctor stopped bugging me about resuming IV therapy. In 27 years, that was the only time that I have ever known Fred to be angry, and I don't actually know it now. It could be that I have been very unaware or it could be that he just doesn't get angry unless really pushed, and Fred is not the kind of man who gets pushed very often.

He is very sure of himself. At least that is the image perceived by others. He has a quiet, self-assuredness about him. Today a

popular term for this is *centered*. Fred is centered. He appears totally focused on what he is doing at a particular moment. When he is with me, he is with me, not thinking about where else he should or could be or what he is going to say at that medical convention in Europe next week.

At this point, two doctors are urging me to change my lifestyle, to stop living alone. I have not yet discussed this with Fred but I know he understands my need to live alone, and my interest in colors and writing as he has continued to keep himself active. And he is active. He practices medicine, teaches at the University, attends several international conferences, usually as a speaker, and he plays tennis—sometimes at 11 pm—surfs, and gets away to ski whenever he can. Once in 1979 he told me that the day before he had spotted a skateboard left by the side of the driveway and he couldn't resist the impulse to try it out. On he jumped and did quite well until it was time to turn or dismount or something like that. He went sprawling. I can picture him, sitting there with a very amazed look on his face, a shake of the head, and gingerly righting himself, moving off toward his motorcycle. He had to get to work.

"It's not quite like riding a surfboard," he said, his voice smiling the whole time. I'll bet his eyes were twinkling too. He tells me some very interesting things. Once he explained that southern Spaniards spoke more slowly and with a Spanish drawl that was different from the northern Spaniards, equating it to the speech variations in our own country based on regionality. It has to do with climate. For an establishment medical man, he knows some very interesting things. He added a fact I had not come across in my garlic research, and he thinks foot massage is a positive activity, aiding in good health. I had a tape of a Hindu mantra going when he came into my room one day. As I reached over to turn it off, his comment was, "That's very good."

During this last hospitalization, Fred was not the physician of record. But he was there. He showed up in an x-ray room during an upper-GI series. The room was cold, seemed horribly dark and gloomy, and I felt awful. During a film-changing break he was suddenly there with his, "Well hello, Bonnie, how's it going?" I was, to say the least, surprised. He sounded as though it was a perfectly natural place for him to be under the circumstances, and after I got over my surprise, it seemed perfectly natural to me too. Fred has always *been there*, no matter what the hour, the place, or his other responsibilities. For me, he has always been there, taking care of the physical, supporting the emotional, stimulating the intellectual, and very recently I have realized, that somehow he is also having an effect on the spiritual part of me.

After all these years of emergencies, trouble, and probably some exasperation that I have been to him, it is slowly dawning on me that I am more than a patient to him. I am a person. I think Fred likes me.

Bonnie Williamson

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Letters From the Family

Galen Gilbert



"Gayle and Fred Gilbert on a fishing trip"

My dad walked with a pronounced limp, but I wasn't aware of this fact until I was about 7 or 8 when one of the neighbor boys and I were arguing. He retorted, "Oh yeah? What about yer father—limping around like a lug!" I hastily responded, "Does *not*!" thinking he really didn't have a limp. But later, after mulling it over, I realized, "Yes, he's right!" How could I be with him so long and never once consciously be aware of this fact of his condition?

First, I never heard him mention it in his whole life, even though it may have played a role in his decision to become a doctor. He rarely mentioned anything about his boyhood (which would make him odd by my generation's standard belief that a sense of one's childhood is essential). When my brother and I were kids infused with the cowboy-myth of the 50s, at bedtime we would often ask Dad to "tell us about the ranch." He would then make rare mention of his own boyhood and describe some rough acreage in California in the area where he grew up near Oroville (his 101-year-old mother still lives there today). There were rattlesnakes, creeks full of trout and bluegills, rocky bluffs, cows, horses, and an ornery old hand named Al who drank whiskey and had a wooden leg. This thrilled and excited us to know that we were indeed part of that authentic cowboy way of life and not mere mortals living a suburban existence in Honolulu.

When I was nine or ten we visited Oroville. When I saw the ranch, I was disappointed to discover how Dad had overstated his ranch tales: The only livestock around was an old dog, the sole building Al's run-down shack. The rest of the acreage was wild, weedy, rocky terrain and a swampy creek where we caught a few bluegills. One cowboy moment did happen, though. Just as we were pulling up the dirt road to Al's, we spotted him outside blasting his shotgun at a rattlesnake.

Later, in my adult life, I came to understand that this piece of land meant a lot to Dad both as a source of recreation and as a place to be around people like Al. This fact of his love of the land was brought to a conclusion in 1994, when my father bought the ranch from his relatives who had recently inherited it, and he had it legally set up as a nature preserve to be enjoyed by family, friends, and all lovers of nature in future generations.

So it was this omission in mentioning much about what was probably a pretty tough childhood with respect to his father, a martinet U.S. Army colonel, plus a physical stoicism, and perhaps some denial about any limitations, that made me virtually unaware that my father indeed did walk with a limp. I never considered that he had a *limp* or *flaw* or *irregularity*—that was just how Dad moved when he walked, and having been so close to him, so much around him, I came to know this jerking rhythm of walking as part of him and something immediately familiar. "That's Dad walking, not some guy limping."

He was otherwise a very fit, square-shouldered, muscular man just under six-feet tall with a handsome square face, intelligent, with a piercing stare that could be as reassuring in its ability to get to the heart of the matter as it was intimidating. His father was a career military man no less intense, also very smart, who was one of General Mark Clark's assistants in the planning of D-Day. My father apparently planned to follow his dad's footsteps by going to West Point, but his hip problem left him unacceptable for military standards.

More significantly, the experience of being stricken with a disease and having to rely on physicians to regain the ability to walk most likely had a profound effect on him and heavily influenced his decision to pursue a career in medicine.

My father's practice of medicine was devoid of the considerations that secretly or overtly influence many, if not most, who choose it as a profession: Things like wealth, status, and fame. Being human, he wasn't impervious to their sway, but probably because his decision to become a doctor was forged out of his experience as a patient, the love was deep. I think that his devotion to medicine, coupled with an incisive, intelligent mind (one definition of intelligence: "the preference for complexity") led my dad to accomplish what he did as a doctor in Hawaii. But to me, these accomplishments are pretty remote, having moved from Hawaii more than 20 years ago. The *Dr Gilbert* I know best is the person I knew as a child growing up there.

I remember the feeling of pride and security I felt when I got into the car, and Dad and I drove early on Sunday morning on his rounds. We climbed into the Chevy, down Manoa hill over to Queen's Hospital, where Dad would usually park near the emergency room in the back, grab his black leather medical bag, and saunter up and disappear into the hospital for a half-hour to an hour, all business. My brother and I would hang out in the

parking lot or feel a rush of excitement if an ambulance pulled up, or sometimes we'd go in and buy an ice cream cone in the coffee shop. Sometimes my dad would come out with some of his colleagues, and they'd stand around in their suits talking, and I'd see how relaxed and smiling my dad would be.

Often we'd follow this by driving up to Maunalani Hospital or Kuakini and the drives were enjoyable, either heading up into the dense verdant area of Nuuanu or the wildly steep hills of Maunalani Heights. He loved to drive and sometimes he'd get into a real slow roll that could be cool or irritating if I was in a rush to do something after we completed the rounds. Often we would go from the top of Maunalani all the way down with the ignition off, coasting for the fun of it.

My dad felt strongly that people, like surgeons, were too highly paid while family practice physicians were too underpaid in comparison. This was presumably because surgery, while dramatic and requiring technical expertise, may be no more valuable than astute practicing of primary care, which requires an analytic ability.

If there's one summing-up comment one could make about my father's life as a physician, it may go something like this: Both in theory and practice, he felt that what medicine needs now are doctors committed as *whole* physicians. While you may have a specialty, those specialties are interrelated with the total care of the patient and must be kept in mind as such. Each doctor should manage to address the issues of his or her own practice, research, community health issues, as well as the historical, political, and economic issues of medicine, so that the medical practitioner will be effective and we will all be healthier.

As his son, however, these issues were not paramount to me. I would argue that just as he advocated and lived the notion of the whole *doctor*, I (and perhaps my generation) would tend to argue more for the whole *person*. By this I mean that if my dad in particular, and his generation in general, had been less fixated on the notion of career achievement and defining oneself so much by one's career, then maybe he could and would have been able to pay more attention to his role and abilities as a parent. I am sure I am not the only member of a doctor's family who has had to forfeit a professional parent's time and attention. I realize my comments aren't restricted to physicians, but could be applied to the general ethos of professionalism and careerism in general.

While dedicated to health and finding cures for people, my father enjoyed many other interests. I think his decision to move to Hawaii when he was just starting out came from the sheer physical pleasure he got from hiking up Manoa Falls or Tantalus, surfing at Poplars or skin-diving at Hanauma, or just loving the way it felt to be out in the backyard with his shirt off, wearing shorts and zoris, doing some yard work. This was his release from the pressures of work and family, and it helped sustain him.

In my mind's eye I can see him riding his big old Hobie surfboard, standing kind of awkwardly, rigid with his legs apart, one arm up and the other extended out, kind of intensely savoring the moment.

Kristen Gilbert

His healing hands built rock walls—endlessly. Soft, large, and gentle, those hands belied their physical prowess and the dexterity that came from their many uses. A Thanksgiving turkey, given to those capable hands, would never be sutured with such care. Those hands could just as easily pump out a catchy *Big Band* tune on his trusty old brass trumpet as till his beloved land.

My father was not a simple man, but he enjoyed and sought life's simple pleasures. He seemed to envy the men and women who possessed little of material value, who lived simply and honestly, and who had a regard for others. He struggled through the myriad complexities that were part and parcel of his life to arrive at those simple truths. And though he was not a religious person, he would have readily embraced as worthy the great teachings of Jesus Christ or Buddha. For him, sacrifice and hard work were life's sacred underpinnings. He never shied from taking on a challenge, no matter how large. His North Star, a well-honed intuition, guided him best in meeting life's challenges and in distilling its truths.

Death abruptly brings all of this to an end. The playful humor, the wise advice, the struggles, and the quiet presence are now locked in time as they become a part of his legacy.

Dad, rest assured you will live on in each of us, giving us guidance even in your death. And while there is some solace to be found in capturing some enduring memories of the time we had together, the truth is, time with you was far too short. We will miss you.

Heidi Shiozaki and John Meyer
Gayle Gilbert's children

We always called him *Dr Gilbert*. We never really realized that friends and family alike found this rather odd. After all, Dr Gilbert had been part of our lives for approximately 20 years. When he and our mother first began dating, she insisted on our addressing him as such. When they married, somehow it still did not seem appropriate to call him *Dad*. Our biological father died of Hodgkin's disease about five years earlier. Our allegiance to our real father, and a child's belief that to call Dr Gilbert *Dad* might constitute betrayal, prohibited us from changing the way we addressed him.

He loved our mother enough to put up with her two sometimes-rebellious children who were approaching adolescence. A man of weaker heart would have been deterred. After all, it's chal-



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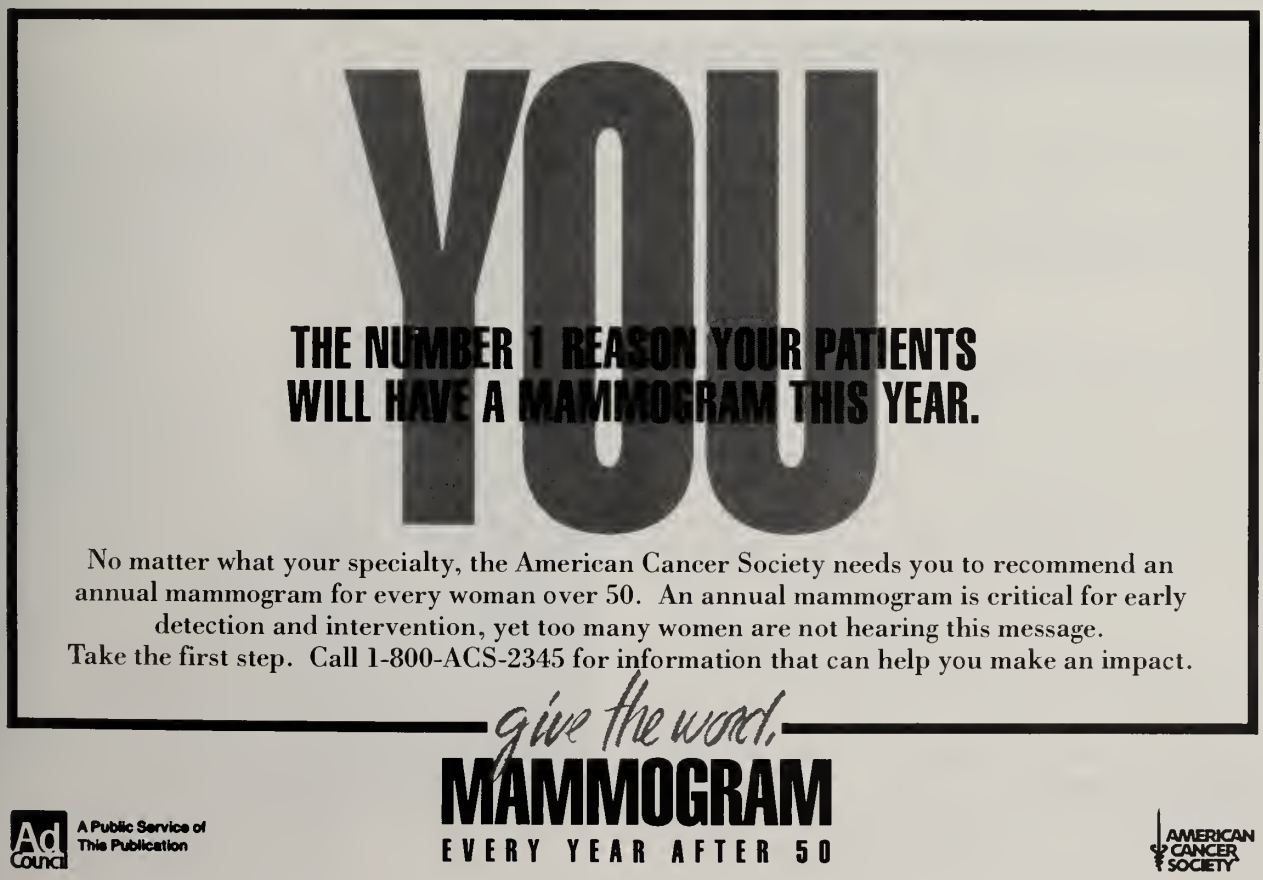
lenge enough to raise one's own children, and he had seven of them. The conflicts with him that we remember involved his consternation, disbelief, and eventual fury that we could possibly have planned to spend a whole day recreating on weekends with friends when he had planned to mow the lawn, trim the hedges, and cut other plants and bushes. In our teenage years, we never gave any thought to the preciousness of his time off, and we certainly could not understand his method of working. In all projects, he was the sculptor with a vision in his mind of what he wanted to create. We were his apprentices, clueless as to what was going on, because he did not tell us. The tireless and compulsive way he worked and played at everything remains fixed in our memories. We could never understand why we couldn't hire somebody to perform some of the tasks around the house that he insisted we do ourselves. Whether it was painting the house, or all of us up on the roof of our two–story house holding onto a rope around our mother while she dangled down the sides to clean the gutters. We never thought we'd look back on those times with fondness, but we do.

There were rock walls—rows and rows of them. Not many could count themselves as a friend or relative of Dr Gilbert who did not, side by side, help him build one. He was a modern Sisyphus; he'd accepted his rock. Somehow the meaning of life was to be found in the building of a wall.

The most valuable things that we learned from him were taught by example. He taught us the importance of having a moral code and living by it. In a time of changing values, his word meant something. He was a disciplined and hard worker. Every undertaking, whether work related or not, was taken care of immediately, and vigorously. He looked forward to waking up and meeting the challenge of each day. He had no interest in accumulating material goods. He drove the same car for the 20 years we knew him, a 1961 Mercedes. It was not running when he purchased it for about $350 from a friend. He maintained it himself and drove it for the rest of his life. Old tools, interesting rocks and shells, a stick with the bark gnawed off by a beaver—these were his treasures. He counted as friends not only people of means, learning, and position, but also the people whose everyday toil made the lives of the former easier. Hard work, tenacity, and determination were the qualities he admired.

Our inheritance will not be monetary for he did not believe that passing wealth from one generation to the next produced a generation strengthened in character. Our inheritance will be greater, and we, in turn, will be able to pass it on to our own children. He has left us with a deep and reverent appreciation of the land, its peoples, and concern for its future. He taught us to think—to have an interest in the way the world works, and how society, economics, etc, are interwoven to create a tapestry of life. He passed on to us a desire to keep on learning, for that is what makes life rich and interesting. The satisfaction of creating and crafting something with our hands; the love of growing things; of working with and sculpting the land; these are his legacy.

Those projects that were endless have now come to an end. Dr Gilbert never asked us why we didn't call him Dad, but he seemed to accept it and know that it wasn't because of any



shortcomings on his part. Somehow in those 20 years, without ever trying to replace our father, he became our father. Although in one lifetime we have lost two fathers, we have been truly blessed.



Fishing buddies: Vernon Chang, Fred Gilbert, and Jim Rimmer.

Vernon Chang

During the last 20 years of Fred Gilbert's life, I was privileged to have spent a great deal of time with him and Gayle, both as a friend and brother-in-law. Over the years we traveled to New Zealand where we flogged every stream, river and lake, visited Spain, France, Switzerland, and Germany, went fishing at the various lodges in Alaska where at one time he caught a 44-pound King salmon. Our Milolii project was the ultimate experience in togetherness.

Besides the numerous family gatherings celebrating birthdays, anniversaries and holidays, I cherished most the Sunday morning outings. We swam from Magic Island to Kewalo Basin and back. Then we'd go up to his house for brunch and, for the next few hours, would discuss any and everything—politics, philosophy, economics, fishing, crime and punishment, sports, travel, farming, and even medical problems. His knowledge was immense and deep but he always gave you the feeling that he was as interested in the subject or problem under discussion as you were.

Fred Gilbert was a man of great principles and his reaction to any problem or request was almost always predictable. They were, it seemed, always based on strong moral or ethical grounds. He had the capacity to base his decision on what would be for the greater good. I often told him that he would not have made a good politician.

If you were not really sick, you could not get a *doctor's slip* from him. Years ago, when I first knew him, he, on his own volition, chose to appear as the expert witness in litigation I was involved in, even though the attorney for the plaintiff was his close friend. His testimony eventually helped the State win the case.

His participation in protests resulted, he believe, in scrutiny of his activities by the IRS and the CIA. His actions also alienated some of his colleagues. He was against the widespread and indiscriminate use of the defoliant Agent Orange. He also gave little credence to the domino theory. He believed the unconventional Vietnam war was unwinnable without destroying the land and its people. History and current events have proven him right. His younger brother Bob fought in three wars, including Vietnam, where he volunteered as a Green Beret.

Fred was persistent and stubborn. He loved to fish but only when the fish were biting. When there was no action, he preferred not to troll aimlessly when "there were so many other things" he could be doing. In 1987, we bought an acre of wooded land in Lani Kona above Milolii on the Big Island. Together we transformed this rocky wild acre into a garden lined with lava rock walls on three sides of its perimeter. Each rock had its own place in the wall. At one time, we toiled for more than two days just to align a huge boulder in the proper position in the wall under construction.

The acre today is literally a *Garden of Eden* where several neighborhood children love to play on its well-tended lawn. Fruit trees, avocados, bananas, coffee, cherimoyas, figs, lemons, mountain apples, Kona oranges, papayas, and white sapotes abound. Also flourishing are the various vegetable crops in an elevated, walled area affectionately known as Fred's *heiau*, his last stone wall project on earth.

Although his accomplishments were impressive, I feel that he was especially proud of what stands as a monument to him in Lani Kona. Gayle, Betty, and I vow to keep this acre of land as beautiful as the day when he left us *to build that great rock wall in the sky.*



Gayle and Fred Gilbert at the International Health Evaluation Association Conference in Kona, May 1988.

Friends of Dr Fred Gilbert who would like to make a monetary contribution in his memory to continue the work of the Hawaii Medical Journal are encouraged to do so. Fred and his associate at Straub Clinic & Hospital for many years, Dr Harry L. Arnold, Jr, were driving forces in keeping our Journal published. Contributions may be sent to the Hawaii Medical Journal, 1360 South Beretania Street, Honolulu, Hawaii 96814, and will be acknowledged in a future issue of the Journal.

Norman Goldstein MD, Editor

In Memory of
Fred I. Gilbert, Jr., M.D.
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Letters From Longtime Friends

Robert Evans, Honolulu

Fred Gilbert's life was indeed full —a *mixed plate* of notable accomplishments.

His medical and research successes are now legend.

Then there was the adventurous, witty, often outrageous rascal that seven of us knew well here in Hawaii from 1938 to 1941. We were University of Hawaii undergraduates at that time. Our closely knit group of friends included Fred, Jim Lambert, Buzz Willett, Charlie Judd (premed), Dave Pietsch (business), Alfred Hagen and Tom Wood (engineering), and me, Bobby Evans (botany).

Those years spawned lifelong friendships, and many treasured memories.

Our college bank accounts were strained, but that didn't limit the scope of activities. We took advantage of everything Hawaii had to offer. All the beaches, hiking and, of course, lots of social activities.

There were two autos among the eight of us. We pooled our funds, ten cents a week each for gas.

We even strung our own flower leis for our dates. After all, leis on Maunakea Street cost 25 cents to a dollar.

During an Easter break in 1939, the group took a memorable Haleakala safari. We left Honolulu aboard the steamer *Haleakala.* We decided we didn't need anything more than steerage class—$5 each round-trip.

The rough Kaiwi channel flattened all except Fred and Buzz who immediately took advantage of their well-being by scaling the wire gate, over the railing, into empty first class cabins.

We began our adventure in Lahaina at Buzz Willett's family plantation home. After one night's rest we set out in the family 1936 Packard sedan and headed for Haleakala Crater.

We hiked into the crater, past giant cinder cones, rare silversword plants, to the bottomless pit.

Fred volunteered to be the stuntman: a photo of him being swung into the pit. Thirsty, sunburned, and exhausted we hiked back up the slopes of the crater and headed for home at 2 pm. To make matters worse, we had four flat tires. We arrived in Lahaina at 6:30 pm.

In 1938 the *Kings of Rhythm* came into being. This was a 12-piece dance orchestra. Included from our group: Fred and Dave, trumpets; Al Hagen, trombone; me, Bobby Evans, guitar and vocals. Also in our orchestra: Alfred Apaka on bass viol and vocals. Tom Wood was our stage manager. Modestly I report, we did enjoy success. We played at all the private clubs, at other local school dances, and at many of the big hotels.

Our most rewarding and steady booking was at stately old Haleiwa Hotel every Saturday night. We loaded our instruments into our ancient vehicles and, dressed formally in black tie and white jackets, we traveled the long winding highway from downtown Honolulu to Haleiwa.

KGU broadcasted a portion of the evening's music every weekend—from 10 to 11 pm.

Al Apaka opened the program singing *"Hano Hano No Haleiwa"* and closed with "To You Sweetheart Aloha."

Fred's regular solo on trumpet was "Sugar Blues."

Our Haleiwa Hotel booking was an all-summer-long event. Dillingham Corporation owned the hotel and the OR & L Railroad which followed a picturesque route along the North Shore around Kaena Point. A most important station was at Haleiwa Bay.

Local folks would pack their formal clothes and come to the hotel for a get-away weekend that included an evening of dancing to the "Kings of Rhythm."

Our last engagement was Saturday, December 6, 1941 at the old House in the Garden in Nuuanu. Our lives were changed the next morning—December 7.

All of us served in the military in both European and Pacific theaters of operation. In 1946 friendships were renewed both here in Hawaii and in New York and New Jersey, Tom Wood's business and residence areas.

No chronicle would be complete without telling one of Fred's more *outrageous* beach escapades.

It was *kapu* (closed) season for lobsters. Fred was at Malaekahana in the

Our deepest sympathy to the family and friends of

Dr. Fred I. Gilbert, Jr.

He will be greatly missed.

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Kings of Rhythm

Left to right:—Front Row: Al Moniz-Piano, Ray Haley-Leader, Bob Magann-Alto Sax, Chris Pali-Bass Sax, Buzz Moriarity-Tenor Sax, James Fernie-Tenor Sax, Bobby Evans-Guitar. Left to right—Top Row: Bill Forgrag-Drums, Oly Roberts-Bass, Al Hagen-Trombone, Dave Pietsch-Trumpet, Fred Gilbert-Trumpet.

water doing a little diving. He came upon one of the succulent creatures and could not resist. Coming out of his dive, he spotted the game warden. Well, Fred wasn't about to release the lobster. He simply and quickly tucked the *live* creature into his swim-shorts and headed for shore.

He greeted the warden and told him he was just catching summer crabs for *pupu*.

Robert Dennis MD, Ob-Gyn
Berkeley, California

I first met Fred Gilbert at the beginning of the 1938 fall semester at the University of Hawaii. We were both freshmen and premed students, and all of our classes were the same. We soon became good friends. We had our undergraduate work together at both the University of Hawaii and the University of California, Berkeley. He went to Stanford Medical School and I went to the University of California Medical School, but since both were in San Francisco, we continued to see each other. He was best man at my wedding; later, our wives pushed baby buggies together in Golden Gate Park.

Thus, I knew Fred well during his youth. He was self-confident, idealistic and romantic, yet practical, cheerful, serious, and always a true friend.

For several years during premed and medical school, Fred had an old Model-A Ford. He named it *Pilikia*, and he had the mechanical ability to somehow keep it running. I remember going to a banquet at the Palace Hotel in San Francisco, our wives in evening dresses and Fred and I in tuxedos. We drove up to the door in *Pilikia*, got out, and Fred handed the keys to an attendant for valet parking.

Aside from his obvious intellectual abilities, physical competence was also important to Fred. While at Cal, he competed for our fraternity in various intramural athletic events, such as swimming. He also ended up as the intramural badminton champion, though I am not aware that he played badminton at any other time, when I knew him.

After he moved back to Hawaii, I only saw Fred when he stopped over in Berkeley on his frequent visits to see his daughter, who lives in Berkeley, his mother, brother and other relatives, who live in Oroville, California, or in transit to other parts of the country on business. In our talks, it was apparent that he continued to develop new interests and ideas that his great determination would bring to fruition. But even near the end of his life, though he was older and much wiser, he still sounded like the young Fred Gilbert I knew in college.

When I talked with Fred on the telephone shortly before his death, he knew that he had only a short time to live. He seemed to have two concerns. One was the Research Institute, which was so important to him. The other was a tract of land near Oroville that he had acquired, which consisted of typical foothill woodland, an ecological habitat fast disappearing in California. He was trying to get it turned over to the Nature Conservancy, or in some way arrange to have it preserved for the future.

Fred may have accomplished a lot during his professional life. But if he had accomplished nothing, he would still have been a great human being. I feel very fortunate to have had him as a friend.

Martin Griffin MD, MPH
Healdsburg, California

During our last two years at Stanford Medical School during WWII, Dr Fred Gilbert and I had the opportunity to work in the research laboratory of a noted renal disease pioneer, Dr Thomas Addis.

Addis was a tall, kindly Scottish scholar and humanist. His wit and reasoning power were matched by Fred's. Addis called on Fred to publish a paper that would outline for clinicians Addis' discoveries. I helped Fred in this project, and we were able to correlate microscopic photos of the pathologic stages of glomerular nephritis with photos we took of diagnostic urine elements.

Fred interned in surgery at the old Stanford Hospital on Clay Street, and I in internal medicine. Fred, who was an exceptional

clinician, questioned some of their concepts. I recall that when a patient was in shock on the operating table and needed blood, Fred incurred the wrath of the surgical chief by opening up the blood IV full blast: The patient immediately rallied and survived.

Fred and I were stationed in a large psychiatric receiving hospital in Palo Alto as captains in the Army Medical Corps. There Fred amazed the staff by drastically shortening hospital stays by his accurate diagnosis and prompt treatment of psychiatric illness and its physiological complications. Always questing, he started a clinical screening laboratory in Palo Alto in his spare time for local physicians.

In 1948 Fred and I were asked to present our kidney displays at the American Medical Association convention in Atlantic City. The Army flew us from Moffett Field with our urine specimens in four thermos bottles. Our exhibits were crowded as Fred held forth on the benefits of mass screening, a revolutionary concept at that time. This was the start of Fred's phenomenal world-wide leadership in automated diagnosis.

For years my wife, Joyce, and I have been the good friends of Fred and Gayle and their family, both in Hawaii and in Oroville. Every hour I spent with Fred was a challenging intellectual adventure with a friend who will be sorely missed by his colleagues, family, patients, and friends.

Marcus A. Krupp MD
Research Institute
Palo Alto Medical Foundation

I first worked with Fred after World War II, when he was a resident in medicine at the VA Hospital in San Francisco. He found time to join me in some studies on the effects of a new drug, cortisone, on immunity in rats. This was my first experience with Fred's capacity to do several jobs simultaneously. He was innovative and energetic in pursuing his ideas to fruition.

Over the years since his San Francisco days, I observed his progress in clinical skills, and his introduction of new ways to provide medical care. Not content with practice alone, he built research programs, a research institute, trained in a new discipline of nuclear medicine, participated in challenging swim contests, grew coffee, and remained involved in the affairs of Straub Clinic.

Aside from these remarkable achievements, he was a fine, caring person —friend, husband, father. He bore his illness of the past five years with equanimity.

Ave atque vale, Fred Gilbert; a man for all seasons.

John S. Wellington MD
Former Associate Dean
John A. Burns School of Medicine

He and I have been friends since the 1940s when we both were residents at the Veterans Hospital in San Francisco. Then and ever since he displayed an enormous capacity for innovation and a spirit of entrepreneurship in the best sense of the word that influenced the pursuit of his profession, his research, and his intellectual life.

Fred was ever on the track of one or another idea or activity, sometimes one that seemed improbable and difficult, if not downright strange, but always creative and often successful. The word *polymath* comes to mind.

Fred was a polymath in action, not only a thinker and innovator, but an activist and originator of things that worked, things that mattered. The more challenging the cause, the more he liked it.

He was a fierce competitor in tennis, just as in any activity he undertook. Perhaps most of all he was a generous and caring man with an abiding love of humankind and concern for the human condition. Would that there were more physicians, more men like him.

Robert G. Dimler MD
Pediatrician, Honolulu

Fred Gilbert was a highly spiritual man. He had that rare ability of putting people at ease, no matter the trade or rank.

He was dedicated to quality care at the edge of the future; to research projects oriented to quality/preventive medicine. He was one of the islands of propriety and purpose in the common waters of mediocrity and indifference. When he crossed the river, other islands saluted the sunset.

He and I talked about some of these things not too long ago. Telling him that he had the gift of giving people a lift, he said, "I never even knew I was doing that!" Indeed—for it was as much a part of him as breathing. His life cast the long shadow of one man.

In 1960 Fred went to London and Paris for further study. A few weeks before he left we talked "of many things and what to do before the fat lady sings." I wrote a letter for $300 and he matched it. That was the beginning of the Pacific Health Research Institute. He was a man who lived his dreams and carried his own lamp.

That slow easy smile was subtle humor, always close to the surface and never ill-used.

Somehow he found time for family, friends, and the joy of living: Scuba diving in the Pacific where ships battered and broken 50 years ago formed an artificial reef for myriad fish; visiting his widely dispersed children and grandchildren; with Gayle, clad in *nor'westers*, fishing Alaskan waters; yearly rough-water swims and pleased that his 1994 time bettered that of 1993.

Here was a man who exemplified the thoughts of Thomas Jefferson: "It is wonderful how much can be done if we are always doing."

C.F. Damon, Jr
E. Chipman Higgins
Siegfried Ramler

Since 1978, Fred was a loyal member of a *book group* made up of 12 to 14 Honolulu men: Physicians, lawyers, teachers, other professionals, and businessmen. We would meet about eight times a year at each other's homes to discuss the book of the *presenter* for that night. Occasionally, the book group would travel to a location off island to explore the environment and to discuss a given book in the evening. Fred was always an enthusiastic participant in these outings. In the spring of 1993, he and his wife Gayle joined other members of the book group

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for a week's trip to Tahiti. On the islands of Huahine and Moorea, he trekked with us enthusiastically to archaeological sites, and on the island of Tahiti we were briefed on contemporary issues facing French Polynesia. We were impressed by Fred's energy and keen curiosity throughout this trip.

There follows a list of the books chosen by Fred. In each instance, Fred would make a 10 to 15-minute presentation and then conduct a discussion for the rest of the evening. His comments were invariably insightful and reflected his wide range of interests and experiences. Fred's eclectic choices of readings are illustrated by the titles listed below. With respect to the last three, Fred invited the author to join us for the evening.

The Limits of Altruism: An Ecologist's View of Survival by Garrett Hardin
The Woman Warrior by Maxine Hong Kingston
New Guinea Tapeworms and Jewish Grandmothers: Tales of Parasites and People by Robert J. Desowitz
Cities and the Wealth of Nations: Principles of Economic Life by Anne Jacobs
The Man Who Mistook His Wife for a Hat and other Clinical Tales by Oliver W. Sacks
An Accurate Watch by David W. Doyle
Our House Divided: Seven Japanese American Families in World War II by Tomi Kaizawa Knaefler
The Gifts of Civilization: Germs and Genocide in Hawaii by O.A. Bushnell

Fred always knew when to back off and let the other person across the room make a point. His lack of pomposity and matter-of-fact candor set the standard for us all. We will sorely miss his keen insights, his wit as a raconteur, his love of life, and his depth of knowledge: ever present, ever friendly, ever kind.

John Rosenthal
Papeete, Tahiti

Although Dr Fred Gilbert and I attended Stanford University at about the same time, and despite both of us living in Honolulu for many years, we did not meet until late 1963 or early 1964, when I accompanied my young Tahitian family to Honolulu and to the Straub Clinic for medical checkups. His swift diagnostic abilities, his efficacy and intelligence, plus his directness and a built-in charm were indeed impressive from the beginning. After several medical meetings, we were privileged to be invited to his home, to meet his family over a drink and to become acquainted during dinner. It was there that we began to explore each other's world, to exchange ideas, and to expose our personalities. Before returning to Tahiti, I gave him my old and very sick, oil-guzzling, Ford station-wagon to use as a beach car. One day, years later, he told me he had left it, bleeding to death, somewhere in Aiea.

Frequently, I sent persons requiring medical help to see him at the Straub Clinic, and when visiting in Honolulu, he always had a cheerful room ready for me in the house on Mott-Smith Drive where he and Gayle lived. We talked long hours and relished our long swims together in the sea. I met and enjoyed his friends; I visited his several places of work and listened fascinated while he discussed his projects for research, as well as for computerized and nuclear medicine. He was intensely devoted to his profession and to serving the community where he lived. It was difficult to realize that Fred had been born with one leg shorter than the other, that the idea of a physical handicap never entered his head; he ran, he surfed, he played tennis, dived and swam, certainly better than most.

Last year he and Gayle, along with the members of a literary club, came for his first visit to Tahiti. Of course he had aged a bit, as do we all, but he was still young and vigorous, full of life and enthusiasm. We spoke of his family, living in different parts of Europe, his retirement, his working ranch in California, and of his research foundation in Honolulu. I introduced Fred and Gayle to our close friends and family. The time literally flew and suddenly they were on their way back to Honolulu. It never even crossed my mind that he could one day be stricken with a terrible illness or that he could even be mildly sick. His integrity, his intellectual honesty, his forceful character and tremendous ability were omnipresent. I shall never forget my real

"Everything is changed except the way we think."
--Albert Einstein

We remember Dr. Fred I. Gilbert, Jr.
with fond aloha and deepest gratitude.



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friend, Fred Gilbert. He was first class, a no-nonsense man in every sense of the word. I can still see him as he put on his old brown hat and walked out of our lives. We never saw him again. Goodbye, Fred! *Adieu. Aloha oe.*

Stephanie Dang
Oakland, California

I heard last month about the passing of Dr Gilbert.

I enjoyed spending time with the Gilbert family. The conversations around the dinner table were always enlightening and so refreshing for me, since my family rarely sat down for a meal together and was never big on communication. I am thankful for the things that your family introduced me to, as they were things that I probably wouldn't have encountered otherwise. I have your family to thank for exposing me to life at a deeper level.

To say simply that Dr Gilbert was a great man seems like such an understatement. All the things he did, and the manner in which he did them, somehow made him seem larger than life. To know someone like Dr Gilbert was an honor, and he is one of the only people I have ever known about whom I feel this way. I don't think I realized until recently what an influence knowing him had on me, however. What I've realized is that just knowing someone like him, someone who accomplished so much with his intelligence and will, enables me to glimpse the possibilities within myself. Before knowing him, I think I was destined for mediocrity merely because I was surrounded by it. Dr Gilbert was truly extraordinary and I think he had a way of pushing those around him to excel. Dr Gilbert was the type of person I used to think I'd only read about. Yet, at the same time, he remained the humble and hardworking man he was. I occasionally look back at the *projects* you all seemed to perpetually have going on, keeping yourselves busy all the time. I was even the beneficiary of some of your character-building missions. And, those were indeed character- building experiences that, again, I probably would have never been exposed to without your family.



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–Keith Katano,
Group Administrator,
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Bearded Viking Doctors

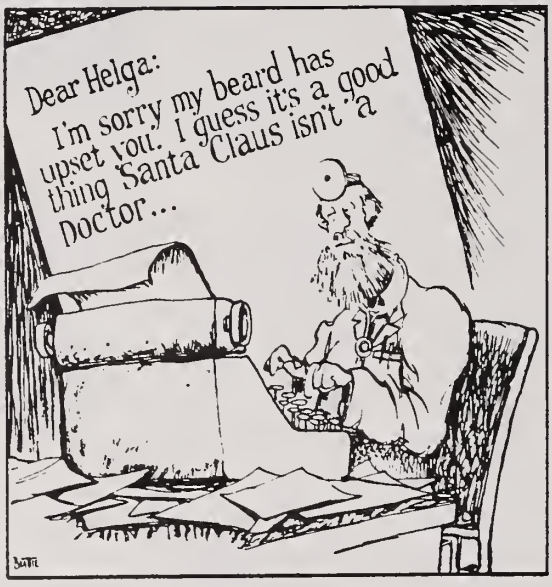
Ms Pedersson, a visitor from Oslo, had written to The Honolulu Advertiser *expressing her concern about doctors with beards in Honolulu. She apparently had seen a television program in which Dr Gilbert and two other bearded physicians participated—and while she said she enjoyed the program she was concerned that the doctors were bearded.*

I am visiting in your beautiful country. Everyone is very kind. I am happy to be here. I hope I stay well.

Recently, I saw on television some doctors speaking about cancer. They spoke very well and the program was interesting and helpful to me as my mother in Norway has cancer.

I was surprised they looked so careless, with long hair and dirty-looking beards on all. In my country, the doctors are the cleanest of all. I would not like to go to such unsanitary looking doctors even if they make such impressive speeches.

Helga Pedersson, Oslo
Honolulu Advertiser, April 18, 1980



Lund-Hammer Replies. By the beard of a good King Harold, it is sad to note that Norwegian doctors are now beardless. It was not always so. It was not so when our Viking ancestors paid visits to the coastal regions from Vinland to Spain. It was not so when Roald Amundsen left medical school in Oslo to discover the South Pole. (Not only did he have a beard, but on the way back from the Pole, he ate his sled dogs for which he was criticized for the rest of his life.)

Nor was it so when Nansen left the Fram and spent a year on foot and by kayak attempting to reach the North Pole over the ice floes. Even Hansen, the discoverer of the cause of leprosy and the best known of all Norwegian doctors, went through life with a long beard.

So fear not bearded doctors, dear lady, for they share a rich heritage with you.

Fred (Lund-Hammer) Gilbert, Jr, MD
Sons of Norway, Snow Shoe Thompson Lodge

Daniel K. Inouye
United States Senator

Dr Fred Gilbert, Jr, was a true pioneer in our nation's health care system. He was a man of unsurpassed compassion, vision, and grace. As one of three physicians from Hawaii ever elected to the prestigious Institute of Medicine, he was indeed one of our nation's outstanding health care policy authorities, playing an instrumental role over the years in shaping our health delivery system as we know it.

Fred had that unique ability to simultaneously focus on the little person who desperately needed medical services and the bigger picture. Long an advocate for ensuring quality health care, he worked tirelessly to increase access for our state's native Hawaiians and other traditionally underserved people. His work at the Pacific Health Research Institute truly helped define for all of us what could be accomplished if we would take the time to remember "the most important things" and never forget the individual patient.

Until recently, Fred was instrumental in bringing to the national forum the many, many accomplishments of Hawaii's physicians. His articulate voice was heard and his gentle but constant prodding resulted in a qualitative difference in how most of us in the Congress and the Administration came to understand the complexities of health care and, at the same time, its exciting opportunities. Without question, for years, Fred had been in the forefront of evolving new approaches and new scientific discoveries.

We will truly miss him. He was a giant in the field of medicine.

Raymond Chung MD

It is with a great sense of loss that I send my sincerest condolences to you and your family on the occasion of Dr Gilbert's passing. In many ways, I am where I am now, practicing and doing research in medicine in Boston, because of the guidance and mentoring I received from him as a Punahou senior working at PHRI back in 1978. He emanated warmth and sincere joy at that time that could not help but influence an impressionable young man. Equally admirable was the vigor he put into living his life to the fullest.

In many ways, perhaps not even consciously, I have tried to model my life since then after his; if I can do a tenth of what he accomplished in life, I will have had a full life indeed.

Please accept my condolences and take heart in knowing that his dreams live on in those who were touched by him.

George Chaplin

On March 6, 1981, the then editor-in-chief of the Honolulu Advertiser*—now editor-at-large and chair of the PHRI Board—spoke at the 61st birthday party for Dr Fred I. Gilbert, Jr, at the Natsunoya Teahouse. Here, with minor editing, is what he had to say.*

The other day, when I was approached about making some remarks here tonight, I got the wrong impression. I thought this was to be a geisha party for a famous samurai named Gilbert–san—a shogun who in the Japanese tradition of Kanreki would be experiencing at age 61 a rebirth, a restoration, a shedding of all the old burdens, and the beginning of a new 12-year cycle of good fortune.

HMSA Pays Tribute to

Dr. Fred I. Gilbert Jr.

His innovative thinking and years of
hard work have paved the way for
tomorrow's medical breakthroughs.

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Fred Gilbert celebrating his Kanreki.
"If only I were 21 again!"

I thought there would be an abundance of sake and dancing girls, so I started reading up on the Tokugawa dynasty and the Meiji Restoration, and going around the house muttering "Hi, dozo" and "Meena–san–kon–ban–wa."

Well, I get here and instead of geisha and dancing girls, what do we have? Terry Rogers, Bob Nordyke, George Mills, Mort Berk, and Charlie Judd—all esteemed gentlemen to be sure, but not exactly Ginza types. At any rate, during the meal I hastily altered my alleged commentary to adjust to my scaled-down expectations.

My problem is that I could give a two-hour talk about Fred Gilbert, but it's hard to give a 10-minute talk. He simply covers too much territory. He's been called a man for all seasons. Which is true, except that while the rest of us have four seasons Fred has 10 or 12 or 15. And he keeps adding.

Not long ago I sent an investigative reporter over to Straub to check out Fred. He went up to the second floor and poked around. He learned that Fred is the father of that computerized health appraisal center with heavy use of para-professionals—and that in earlier days some of his colleagues, lacking his vision, didn't fully appreciate what he had developed, but they do now.

Fred has lectured on this multiphasic screening at international conferences from Canada to Australia, in addition to Washington, Atlanta, San Francisco, and Las Vegas. Fred loves to lecture in Las Vegas.

The reporter asked to see Fred, but a nurse said his office wasn't on that floor any more and perhaps he should try the Pacific Health Research Institute. So over to the Alexander Young Hotel he went, and while browsing around there, he found that PHRI came into being 20 years ago when two clinicians—Fred and Dr Robert Dimler each wrote a check for $300. And he ran into some information about major projects such as chronic disease clinics and breast cancer detection and heart studies and even "25-HHC for the Prophylaxis of Post-Menopausal Osteoporosis."

A former PHRI staffer there told him that Fred Gilbert is a great stimulator of people's talents. The comments went like this: "He gives you the feeling he needs you desperately. He conveys that he's not that comfortable in your field, although he really is. You want him to be proud of you, so you ultimately give him everything he needs. He gets the job done and he gives credit where due. I guess body chemistry has a lot to do with it. I'm still trying to figure out his formula."

But my reporter couldn't ask Fred about his formula because he wasn't at PHRI. All this time the journalist had been looking for an internist but he was told that Dr Gilbert—a resident in nuclear medicine (at least until June) while at the same time president of the Hawaii Chapter, Society of Nuclear Medicine—might be found in the bowels of Straub Clinic & Hospital.

So the journalist hied himself back to the corner of Ward and King. On the way he bumped into somebody who told him that when Fred went into the Army from Stanford Medical School as a PFC, later becoming a captain, he dallied with the idea of turning psychiatrist. And later he put in a year as a surgical intern. That was back in 1945 when you could take a straight surgical internship.

Before Honolulu, Fred worked for awhile in Hilo—and one weekend someone came in with a broken hip. There was no specialist around to handle it and no one could come from Honolulu at that time of the night, so Fred just went ahead and nailed it, and the patient did fine.

Well, my reporter finally found Fred's new office, but the doctor wasn't there. Somebody said he might be up at the University of Hawaii Med School. So the search continued.

At the Med School, Fred was lecturing on preventive medicine and public health. So the reporter, while waiting, chatted with another professor who observed that the students are not all that interested in the subject.

He said that before Fred came, the lectures left about one-third of the students angry, one-third sleeping, and one-third listening. It was decided that some outstanding physician from the *real world*, who had high credibility, was needed to say the same things. So they signed on Fred. But the odds shifted only slightly. Now one-half is mildly interested.

What causes the anger is the expressed view that being a doctor is not the most important thing in having a healthy community—that jobs, clean air, clean water, good food, social support systems are even more fundamental.

That's pretty rough, of course, on a student who suffered emotionally to get into school and is suffering emotionally to stay in. But Fred is never one to duck the hard problems.

He occasionally persuades a patient who has special characteristics that med students should know about, to sit down in front of a class of first-year students and tell his story. That lets the patient come across as a whole person and not as an unusual set of kidneys or lungs.

The patient is there because of trust in Fred, who always sees the whole person. That's reflected when subspecialists run into trouble and systems start going sour and a call goes out for Fred to come up to intensive care and put it together in terms of the whole patient. Fred is a compassionate man who once told the Kansas Medical Society that a doctor who functions as a machine deserves to be replaced by one.

Meanwhile, back to med school. Fred finishes his lecture and the reporter tries to chat with him. Fred is cordial, but apologetic—he has to rush to the airport to get a plane to Las Vegas, where he's checking out some new computer equipment. Great medical center, Las Vegas.

So the reporter is reduced to calling a few people and asking what they can tell him about the elusive Dr Fred Ivan Gilbert, Jr.

One calls Fred a biomedical entrepreneur, successfully operating to establish new programs that interest him. He describes him as highly perceptive with a fantastic memory, always on his toes, putting everything he deals with in perspective with the 20 or more medical disciplines. Fred, he says, has a cosmic view—

Friends of
THE
CANCER
RESEARCH
CENTER
OF HAWAII

Oh behalf of the Friends of the Cancer Research Center of Hawaii, we would like to bid *aloha pumehana* to Dr. Fred Gilbert, our fellow boardmember, friend and colleague...

Fred, we thank you for sharing your knowledge, your dedication, and your unwavering support in the fight against cancer. Hawaii's medical community is richer for it, as are Hawaii's people. We will miss your energy, your enthusiasm, your vision for what could be, and the optimism and tenacity you showed to realize it.

To Fred's wife, Gayle, and to the members of his *'Ohana*, we share your pride in Fred's accomplishments and your pain in his passing.

Aloha ia 'oukou apau...

The Boardmembers of the Friends:

Dan Bent
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Photo by John Eddy

The Friends of the Cancer Research Center of Hawaii work to reduce and prevent cancer-related death and suffering by promoting community support for cancer research and education focused on research opportunities and challenges unique to Hawaii. For more information on how you can help our mission, call 586-3010, or write the Friends at 1236 Lauhala Street, Honolulu, Hawaii 96813.

adding that he wouldn't be surprised to see him establish a nuclear-powered space platform with a fully computerized screening facility for denizens of outer space.

A colleague at Straub calls Fred a superb physician, with a keen mind that goes beyond insightful diagnosis of patients to long-range innovation.

"Fred looks down that line farther than most, and he stays in the forefront of what's ahead," is the way he puts it.

He sums up: Fred is outstanding. It's hard to grasp the depth of this man.

And where is Fred? In Las Vegas, natch.

The reporter makes another call.

This physician rolls the clock back a bit. He recalls Fred as a premed student at UH, before he went to Berkeley and on to Stanford.

Fred was always curious, inquisitive, receptive, innovative. Even as a student he was extremely mature—not above having a good time, but never squandering time. He always had something going.

He was a superb tennis player—fast and competitive. He was great on the trumpet and played with Bill Rabe's band, a popular orchestra at school dances, and with Ray Haley's Haleiwa dance band on the North Shore, broadcasting on Saturday nights over KGU. Fred still loves jazz and the big band sounds. Music is an important part of is life.

Fred has an investigative mind, but he has never lost his concern for the patient. Fifty percent of medicine is making a person feel the total focus is on him or her. To be able to make a patient feel he or she is the only other person in the world—even if the waiting room out there is full—that's the real test.

The reporter is getting a bit dizzy from all of these plaudits—and a bit skeptical. There has to be another side. After all, this guy loves Las Vegas.

So the fact-finder perseveres.

The next call starts out with some promise. The man being questioned says: Fred Gilbert is a bad person to cross politically. The reporter asks: what's this all about? Well, it turns out there was a hospital administrator who was misbehaving (to put it mildly), so Fred got him fired. And for good measure he also defeated an undeserving legislator and a dubious member of the Board of Supervisors in the old days. Moral: If you're *bad news*, get away from Gilbert.

What else? Well, says the source, Fred Gilbert is the most widely diversified guy I've ever seen. A great all-around physician with a creative and restless mind. He has a great grasp of the literature. He digs into things, gets them going well, then moves on to start something else.

Anyone, he adds, can learn the mechanics of medicine and set up a practice. But it takes something more to be a *real* doctor.

He recalls that over the years, although Fred has always been extremely busy, he managed a lot of time with his family and friends. On weekends Fred would stay out surfing with children for six or seven hours at a crack.

He's nuts about children, loves to play and work with them. And he's great at keeping them busy. He'll say, "Hey, let's clean up the yard," and they all do.

The inquiring reporter wants to know more about this side of Fred. He discovers there are seven children—Jerry, an accountant, and Gil, a photographer and designer, are here tonight. Galen lives and works in New York in the field of ceramics. Rondi teaches English at UC Berkeley; Kristin is a cellist in Washington DC and has performed in Carnegie Hall; Lisa teaches linguistics at the University of Barcelona; and the youngest, Cara, is a freshman at Occidental.

Fred does love kids. I have a feeling that if he and Gayle move into a new neighborhood when Fred is 90, the first thing he'll do is check out the schools.

I use an age like 90 advisedly. There's a record of longevity in the family. His mother—whose kin from Norway settled in Oroville, California—is still living there. One of Fred's aunts was the first woman elected to public office in California. Another aunt, 89, does all the book-work for the rice farms she owns. And still another aunt, a mere 83, lives in Sacramento. Fred's late father, of English background, was a retired U.S. Army colonel. In fact, Fred's first exposure to Hawaii was when his father was stationed at Fort Shafter.

Fred has been a true Islander from the start. He was one of the first to use air tanks in scuba diving. He's into wind-surfing. He's a two and a half-mile rough-water swimmer. Fifteen or 20 years ago, he and two others paddled 112 miles on surfboards around Oahu; it took three and a half days and made the Congressional Record. It was the first such endeavor and probably the last. But even now, when Buffalo has a big board meet, Fred will probably show up.

Since my reporter did a thorough job on Fred, I'm tempted to detail all of his research activities; give you the titles of his 45 publications; list all the professional organizations he's headed or belongs to such as the Institute of Medicine of the National Academy of Sciences, enumerate all of his honors, fellowships and awards, and describe all of his community services—but I won't.

Let me conclude by simply saying that he is "calm and effective, humane and observant, prompt and careful, at once learned and willing to learn, eager alike to get and give knowledge, incorruptible, and pure in mind and body."

Those words were used to describe Hippocrates. I borrow them tonight because Fred Gilbert is faithful to that tradition.

Patricia Lanoie Blanchette MD, MPH
Professor of Medicine and Public Health
Director, Geriatric Medicine Program

With a person as enormously talented and unfailingly generous as Fred Gilbert, we will all have different favorite memories of him. Brilliant and compassionate physician, patient and generous teacher and mentor, trusted friend and companion, exemplary community leader, protector of the public health, probing researcher—all of these terms describe him.

I first met Fred when I was a medical student and he a respected and accomplished physician at Straub. Among the many things we students absorbed from him was his humble and thoroughly well-prepared approach to patients. I don't ever remember him talking about this, it was just a given. I remember how he could so completely convey to a patient that he cared. He had a talented diagnostic hand that could both find the problem and impart comfort at the same time. He was never satisfied with the current knowledge. We needed to push the boundaries, to learn more, to continuously involve ourselves in research.

What surprised me the most and impresses me still was his ability to listen to medical students as though we might actually have something important to say. It's difficult to describe how encouraging this is to people just entering medicine. Fred, I think of this often now that I am a teacher, and I am grateful. I miss you

and I know that you are a part of many of us in practice today. Thank you.

Ralph M. Beddow MD, FACP
Associate Professor of Medicine
Former Chief of Medicine
Straub Clinic and Hospital

It is with difficulty that I attempt to express my feelings about my dear friend and colleague of many years, Dr Fred Gilbert. He passed away in February, 1995.

He was a complex personality endowed with many talents. First and foremost a skilled physician-internist who applied advances in medical science to his patients in a *caring* manner. He was always kind and supportive of those seeking his care. However, Fred possessed a reservoir of boundless energy. I always admired and marveled at his ability to find the energy to initiate and complete many research projects. He was a master in *grantsmanship.* He would spend hours writing proposals that resulted in the funding of many research projects at the Pacific Health Research Institute.

He also found time as a teacher of medicine. He was a Professor of Public Health, School of Public Health, and Professor of Medicine, John A. Burns School of Medicine, University of Hawaii. He was a Fellow as well as a Laureate of the American College of Physicians.

We were partners in the Department of Medicine, Straub Clinic & Hospital for many years. In the early 1970s he suggested that I organize a diabetes education and treatment center managed by a registered nurse. In his opinion the quality of care for diabetics would be vastly improved, and I would be able to see and care for many more patients with diabetes mellitus. At that time, the idea of having a nurse functioning as a manager of a specialty clinic was an innovation ahead of its time. I resisted the idea. However, Dr Fred Gilbert, who also had a persuasive side to his personality, convinced me of the soundness of his proposal. The rest is history! The Diabetes Center of the Pacific was a pacesetter in the use of a multidisciplinary team in caring for patients with diabetes mellitus.

Fred was also a visionary—a man ahead of his times. He anticipated future changes in medicine, and the way some services would be provided. Much of what he envisioned has come to pass. Tenacity was another of Fred's attributes. If, in his opinion, his proposal had merit and deserved support, he persisted until his objective was achieved. This characteristic served him well as medical director of PHRI, and contributed significantly to its success.

Max G. Botticelli, MD
Professor and Chairman
Department of Medicine
John A. Burns School of Medicine

My recollections of Fred Gilbert always begin with his galloping up and down the stairs at the Queens Hospital. I suspect he was doing that when I first saw him during my internship in 1956. He was rarely seen on the elevator and most of the time he was taking the steps two or three at a time. It fits with his other physical accomplishments that were documented in his obituary. It also fits with the intellectual restlessness that characterized his full and productive professional life. He didn't seem to be able to do anything at a regular pace.

But what I remember most vividly is his mastery of the art of internal medicine. He was considered by the house staff to be one of or perhaps the best internist in Honolulu. To be a master of this art requires deft hands, acute senses, and an inquiring mind. Fred had all of those and, in addition, the intellectual honesty and love of his work that is required of a great artist. This combination of attributes was a natural ethical bulwark against the economic forces by which we have been inundated. While we may not have prevailed in this effort, it wasn't Fred's fault; he was a paragon of professionalism for many of us.

As an intern I was swept off my feet by a beautiful and charming young nurse whom I courted with great intensity. As an argument for marrying me, I told her that my long-term goal was to return to Honolulu and practice internal medicine like Fred Gilbert, and I think this had something to do with my

In Honor of

Fred I. Gilbert. Jr, MD

As a personal friend,
I will always remember him

Mark Polivka

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eventual success in gaining Alice's hand. Fred was and is an important role model for me, and though I fell short of his standard, what little success I've had I owe saliently to him.

Reginald C.S. Ho MD
Straub Clinic & Hospital
Immediate Past President
American Cancer Society

When I completed my medical residency in 1963, my chief asked me what career path I would like to take in medicine: clinical care, research, or teaching? I said that all three appealed to me, and I would want to strive for excellence as a clinician, as a researcher, and as a teacher. He smiled and said very few people are able to achieve excellence in all three areas. Little did I know that a few months later, I was to meet Fred Gilbert, who has become such a *Renaissance Man* in medicine in Hawaii.

I have known him as a superb clinician who took pride in solving difficult diagnostic problems. I have known him as a compassionate clinician who was loved by his patients, and whose concern for their welfare was uppermost in his counsel to them.

I have known him as a researcher whose work has been widely recognized across the country, and because of this recognition was appointed to the Institute of Medicine of the National Academy of Sciences in 1978 by President Jimmy Carter. One of the pleasures of my travels in recent years has been to convey messages from his many friends among eminent scientists across the country, who asked to be remembered to him.

I have known him as a dedicated and committed teacher, who has taught not only medical students and residents, but who has also taught many nurses and technicians that they have an important role to play in the care of patients in nurse-managed clinics.

If I were limited to a few words that would describe my memories of Fred, these would be vision, vigor, optimism, and honesty.

He had vision in the 1960s when he first proposed the concept of the health appraisal center as a nurse-managed program. He was met with skepticism and resistance. But by sheer energy and refusal to consider failure, he made it work. It has since become the prototype of similar programs around the country. He felt that many tasks formerly reserved for physicians could be done by paramedical personnel if the task were well defined and controls were established. Few people bought that concept at the time.

He had an ability to inspire cooperation because he was honest in his dealings and was able to engender trust and cooperation in people who worked with him.

When he applied to the National Cancer Institute (NCI) for a Breast Cancer Detection Demonstration Project for Hawaii, he encountered great odds because of the small population and insularity of Hawaii. However, he was able to convince the NCI that he had the numbers and was able to do the job. He was right, and as a result, mammography was demonstrated to be an important screening procedure for women, and the use of mammography became established in Hawaii.

Every once in a while, someone appears whose life and contributions have made his patients, his colleagues, and his community the better for having known him—Fred was that kind of a person.

Edwin P. Gramlich MD
Pacific Health Research Institute

I first met Fred Gilbert in July of 1965 when I joined Straub Clinic as its first psychiatrist. Fred was extremely helpful in my initiation into Straub Clinic and into the practice of medicine in Honolulu. Over the years, Fred, in his inimitable way, became a close friend, a mentor, a professional associate, a surfing buddy, a diving companion, a tennis teammate, a business associate, and a land and boat co-owner.

From the beginning, Fred was most inviting and my family participated with his in many outings and family celebrations. In the late 60s and early 70s, we were avid surfers frequently arriving at Makaha or the North Shore before the sun came up to surf prior to returning to work for the day. We surfed weekends and went on numerous scuba-diving expeditions on Oahu, Lanai, and the Big Island.

In the early 70s, our lives changed in many ways. I left Straub Clinic, we both were divorced, and we began to play tennis instead of surfing, although we continued on diving trips. On the tennis court, Fred was a formidable opponent and an extremely good partner in doubles. In the mid 70s, Fred and I established an ongoing doctors' doubles tennis match weekly at the King Street courts which lasted even though I moved to the Big Island in the 80s. The Thursday evening doctors' men's doubles continued until Fred became ill in early December of 1994.

In 1973, Fred and I bought property together on Mount Hualalai (Kona, Hawaii) and spent many weekends there with our chain saws clearing the property of *ohia* trees for roads and eventual cabins. He and his family built a small cabin on their property but I never was able to build on mine.

The 1980s brought yet another change in my life and change in our relationship. I moved to Kona in early 1980 to practice obstetrics and gynecology. A group of physicians on the Big Island formed a coffee enterprise which eventually became Captain Cook Coffee Company. Fred participated fully in the purchase of coffee lands and in running the company until we sold it in 1991. Fred contributed immense expertise to the managerial aspect of the company itself and demonstrated his capacity for hard work in running the coffee farms and dealing with the many difficulties associated with business.

In 1989 after Fred, as director of the Pacific Health Research Institute, procured funds to establish the Hawaii Quality Cost Consortium and after I indicated I wanted to move back to Honolulu in early 1990, I was offered the position as project director. In the last four and a half years, Fred had been a valuable source of guidance and support in keeping the HQCC project alive.

If it is not conveyed in the foregoing, I would like to emphasize that Fred represented industry and enterprise in every aspect of his life. He was hard working, fair, and giving in everything he did. He contributed positively to everything he participated in and was tenacious in making those participation's successful. Fred is missed most sadly and remembered most fondly, but it would be unfair and inaccurate not to add a negative note. Fred hated income taxes and worked passionately at keeping his payments to an absolute minimum. Those who know him well will understand this totally. Fred also had difficulty taking vacations. When we scheduled trips to Micronesia, he scheduled working conferences with Micronesian physicians to make the trips deductible if not to avoid pure leisure.

Fred Gilbert filled a large space in my life and the lives of others. That space is now empty of the person of Fred I. Gilbert, Jr, but it is rapidly filling with memories and experiences that have been mediated by his presence. When the pain and sadness brought on by his early departure from life have ended, we will once again be full of gladness for the time we spent with Fred Gilbert and our lives are better for it!

Christian L. Gulbrandsen MD, Dean
Satoru Izutsu PhD, Associate Dean
John A. Burns School of Medicine

Dr Fred I. Gilbert, Jr, a physician, scholar, and researcher, was a founding member of the John A. Burns School of Medicine. His regard and respect of his fellow humans, colleagues, students, and friends were his hallmark. Fred was a *doctor's doctor* who was sought by many for advice and care.

Fred was a tireless builder. Among the many institutions and programs he helped build, the following stand out—the Straub Clinic & Hospital where he practiced medicine, the John A. Burns School of Medicine where he taught hundreds of future physicians, and the Pacific Health Research Institute where he initiated and conducted research. His most recent research activity, the Prostate, Lung, Colorectal and Ovarian Cancer Project, will undoubtedly save countless lives in Hawaii. The research findings will affect people throughout the country and the world.

In addition to all of his pioneering efforts, he was an avid conservationist. As a man who adopted Hawaii, he loved this state. He respected the world around him. His unwavering belief in its beauty and strength led him to pursue actively the legacy of preserving thousands of acres in California for the conservation of agricultural land and wild habitat so that future generations can enjoy and revere.

As a master physician, a scientist, and a compassionate human, Fred has become a permanent part of Hawaii. His presence continues in the programs and institutions he helped build. Most significantly, his influences continue in the lives of all whom he has touched.

Walter S. Strode MD
Urologist, Straub Clinic & Hospital

When I, along with Bob Rigler and Bill Moore, came to Straub in August of 1955, Fred Gilbert was a young whipper snapper. We soon came to realize that Fred's unusual probing wit, sarcasm, and humor often were responsible for the high level of intellectual and scientific curiosity that marked each of our meetings.

He made a point of questioning the basic concepts and solutions we traditionally worked with. Irritating he was many times, but never without a reason. Because of his persistent penetrating questions, we would laugh and then see the wisdom that was uncovered. Enlightenment and progress often then followed.

I was not privileged to know much of his great family or of his many nonmedical pursuits. I understand these were numerous and varied, both his children and his outside endeavors.

Fred's death has made me the senior partner at Straub. I hope that all of us who follow him will remember the legacy he leaves as a great physician, a warm humanitarian, a keen intellectual, and a sterling patient advocate. We miss him greatly.

Robert L. Kistner MD
Vascular Surgeon
Straub Clinic & Hospital

To reflect on the memories of Fred Gilbert is to recall a man who impressed all who had the opportunity to become acquainted with him. Fred's quiet, relaxed, friendly demeanor covered a driving energy toward his inner goals. He was a totally dedicated physician who took a personal interest in each and every one of his patients. I think he treasured his medical practice most of all. His sharp intellect and boundless energy were focused toward driving back the frontiers of medical science wherever he encountered them. Fred was a can-do person who would take the greatest of delight in doing the seemingly impossible task time and again. During his long career (40-plus years) at Straub Clinic, he was a constant source of agitation for education, research, and the common good, in addition to his intense efforts to provide the highest standard of care for his own patients. He encouraged the young and eager new physician and stood his ground against the more established forces as they crossed his path. His qualities of love, competition, dedication to the individual, and his strong-minded and strong-willed approach to achieve his goal will live in the memory of those who knew him and survived him.

Frank Tabrah MD
Baromedicine
Straub Clinic & Hospital

These very appropriate pages will enshrine Fred's brilliant professional accomplishments, and of these one might ask, why his success? Some solid reasons—there was a magic in Fred's touch, a unique grace that captivated editors, peers, and granting agencies. Fred sensed what was important in medicine years before the pack caught up. He was utterly personable, persua-



Doug Wilson, Fred Gilbert and Frank Tabrah

sive, logical, and *right*—and above all, a perfect gentleman in the intellectual forum and economic jungle. Not to say he treasured others' opinions—he generally didn't, and his wit in exposing stupidity was legendary. When Fred rose to speak, the uncomfortable truth often struck in the velvet glove of humor, leaving his hearers with the germ of suspicion that perhaps health care needs an uplift.

And there was much more. Fred's utter commitment to humane patient care immersed him in a myriad of clinical triumphs and tragedies that the world of his peers brought to him, often in desperation, for the deeper answers, for Fred was truly kind,

considerate, and intensely philosophical. With no illusions about the human condition, he managed, to the end, a productive optimism for his world and himself. Though Fred is gone, his words and ways will continue to enhance thousands of lives and careers. Thank you Fred, for all you did for us; and Gayle, for the happiness and support he found in you.

Brian F. Issell MD
Director, University of Hawaii Cancer Research Center and Professor of Medicine

What an honor it is to share with you a few professional and personal reflections about Dr Fred Gilbert in this issue of the *Hawaii Medical Journal* dedicated to the memory of this outstanding individual. His energy and enthusiasm touched so many who are working to improve health care in our state.

Fred's contributions to cancer research and care in Hawaii are numerous. Let me mention just a few. In the 1970s, Fred co-directed cancer control activities at the Cancer Research Center of Hawaii. During this time, he established mammography as an important means of controlling breast cancer by conducting the Hawaii Breast Cancer Detection Demonstration Project. This was one of 29 breast cancer screening programs nationwide funded by the American Cancer Society/National Cancer Institute. The project screened more than 10,000 Hawaii women of various ethnic groups between March 1974 and December 1979. More than 170 new breast cancer cases were identified over this time.

Fred could never say no to a request for help or to an opportunity to bring funds for health care research and service into our community. In the 1980s, Fred responded to our need and became interim program director of cancer control at the Cancer Research Center. More recently, he was responsible for Hawaii's participation in the National Cancer Institute-funded prostate, lung, colorectal, and ovarian cancer screening project which is recruiting 15,000 individuals aged 60 to 74 years of age nationwide. Until his death, Fred served on Cancer Research Center advisory committees. He provided us all with invaluable advice coupled with a warm and delightful personality.

I, like so many, have been personally influenced by Fred's dynamism. Having taken up my appointment as director of the Cancer Research Center of Hawaii in September 1988, I believed that clinical research in Hawaii was unlimited. I thought that the absence of a large university-operated medical center was not an impediment but an opportunity to lead the world with innovative community-based research projects. My close friends and colleagues from Mainland cancer centers would visit and smile sympathetically while I assaulted them with enthusiasm. Occasionally, my closest friends would tell me I was delusional. However, this had little impact because all I had to do was talk to Fred to have my enthusiasm (and delusions) reaffirmed.

Fred's optimism, enthusiasm, and tenacity knew no bounds. He was a master at getting something started. When individual self-interest or institutional rivalry appeared to be impeding progress, Fred would adroitly sidestep these vexing issues by brilliantly articulating the bigger more important vision interspersed with a complex and bewildering story about how the vision could be achieved. All of us in cancer research and care will miss Fred very much.

Terence A. Rogers PhD
Former Dean
John A. Burns School of Medicine

"Last summer's grass
The old warrior's dreams"
—Basho

Fred Ivan Gilbert, Jr, MD was a larger-than-life character (with a capital K). His passing has left large holes in many lives. First and foremost he was a doctor and we have oblique but superb views of the extent of his skills, concern, and compassion for those he took care of. From my perspective in medical education, I saw him in his visionary role and, over a 30-year period, we saw many of his visions come to reality, and frequently he, himself, was the major change agent. When we differed on these matters he was never abrasive. Instead he would give that notorious boyish smile and explain that if I didn't agree it was simply because I did not understand, which was harder to take than if he had yelled back. Fred had that largely vanished quality of *civility*.

I also knew him as one of the original supporters of developing a medical school in Hawaii. Interestingly, the 15 or 20 such doctors were not wild men and women, but rather people recognized for their conservative bent in both medicine and personal styles. Perhaps Fred got away with being a visionary because, from his Straub partnership to his civility and unchanging Florsheim shoes, he seemed the epitome of conservatism. Fred did his part in teaching medical students with great enthusiasm and the students understood that his enthusiasm was for his vision of medicine and not for Fred.

Fred and I were also personal friends and we each had a concurrent dark period in our personal lives in which that friendship was *grappled with hoops of steel*. It also led to some escapades which fortunately did not come to official or journalistic attention. Finally, I knew Fred as the devoted husband of my friend and partner of 20 years, Gayle Yamashiro Gilbert. In her guise as my assistant, she was, as one perceptive visitor observed, *the real dean* of the medical school.

We will often miss Fred, but we can be quite sure that he did not have a dull life. Besides, my children adored him!

Shigeaki Hinohara MD
Past President, IHEA
President, Japanese Multiphasic Health Testing and Service

Dr Fred I. Gilbert, Jr, and I have been friends for more than 20 years. When I visited his Straub Medical Clinic for the first time, I learned much from the extremely efficient way he ran the multiphasic testing. It was conducted as a system on a large number of company workers, and this system was based on principles of preventive medicine. I was also greatly enlightened by the way he cooperated with the *establishment of nurse-managed and physician-supervised chronic disease clinics*, in their early stages. He had much to teach me, by his foresight, articulate planning, and stalwart power of execution.

When the International Health Evaluation Association (IHEA) was formed in 1987 in Hawaii, he became the founding president, representing the founding members. Since then his contribution has been enormous in the expansion of IHEA and in his



Fred Gilbert and Shigeaki Hinohara



Dr and Mrs Morris Collen and Dr Gilbert

capacity as executive director of Region III of IHEA, which includes Japan and Hawaii. He was a most sincere man, and this sincerity made him a fine designer of an improved medical care system.

To lose him in such a short period of time to illness is a deep sorrow to all the members of the IHEA.

Morris F. Collen MD
Director *emeritus*, Division of Research
Kaiser Permanente Medical Care Program
Oakland, California

The American medical community has regrettably and prematurely lost a giant among his peers. Dr Fred I. Gilbert, Jr, was a highly respected and skillful physician, an innovative medical administrator, a renowned pioneer in applications of new technology to patient care, and an excellent scientific researcher. He was a good friend of mine for more than 30 years.

In the 1960s, I first became associated with Fred when he became the founding president of the International Health Evaluation Association (IHEA). He called me at that time from Hawaii to invite me to join him in this pioneering organization. He guided IHEA in its worthy objectives to foster computer technology in preventive medicine, and to use computer-based automated multiphasic health testing for the efficient evaluation of the health status of people. I was honored to accept his invitation, and since that time I was privileged to have been associated with him in this increasingly important field of preventive medicine. As recently as May of 1994, we were together at an IHEA meeting in Tokyo where Fred was active on an international program committee, and he gave a visionary paper on his design for optimal primary health care. In addition, he gave a wise, yet gentle, critique of a paper that I had delivered. At this recent meeting I was completely unaware of his impending fatal illness. Fred was at his prime as a medical statesman and as an active contributor to medicine. His premature death is an unfortunate loss to medicine and, of course, a sad one to his family and friends.

I was further enriched and honored by my association with Fred at periodic meetings of the Institute of Medicine, of the National Academy of Practice in Medicine, and of the American College of Physicians. As a friend, I always enjoyed his pleasant company, he was a true gentleman, and a model of excellence in everything he did—even in his Kona coffee. I liked, respected, and admired Fred very much, and I shall miss seeing him at future meetings.

Robert M. Worth MD, PhD
Pacific Health Research Institute



Dr Bob Worth

Fred Gilbert was born and raised as an *Army brat*, which implies frequent moves on behalf of serving the needs of the general public. Such a childhood may also give rise to a view somewhat separated from the culture of the *others*, who might be persuaded to live in a more orderly fashion.

How does this make for a happy 20-year working relationship with someone who was raised in a three-generation extended family in a missionary compound in central China?

Frequent moves were generated by fleeing from imminent danger in local civil wars (1925, 1927) and from foreign invasion (1932, 1937 to 1940). The public service values were explicit (build schools and a hospital, train local staff, turn control over to them), as was the goal of reform of the culture outside the compound walls (unbind your daughters' feet, equal education for boys and girls, etc).

Fred emerged from the speeded-up medical training of the war years, returning to Hawaii in 1951 as a primary care doctor in Hilo, and thence to Straub, which served as his base for trying to improve the way medicine is practiced. On the other hand, I arrived in Hawaii in 1956, delayed by three years in the Army before my academic career. My first job was at Kalaupapa, where I was appalled by the social damage being done by well-intended but no longer needed rules of segregation. This launched me into health services research to change the practice of public health.

When I was asked to put together the curriculum for public health/community medicine for our brand-new medical school in the mid-1960s, I immediately joined forces with Fred Gilbert. He was not only an excellent role model of a primary care physician (diluted a bit when he moved into nuclear medicine), but he also felt that the patient-primary physician dyad is the key factor for good care.

Fred's twist on this was:

1. An aging patient group leads to more chronic illness;
2. Once the physician has confirmed the chronic disease diagnosis and participated heavily in patient/family teaching about long-term management, the major continuing monitoring is turned over by protocol to specially trained nurses;
3. Thus freeing the physician to do more things that are intellectually challenging, such as research.

Fred loved to bring patients to class to answer a series of questions, leading up to an illustration of structural problems with medical care. For example, he brought in an elderly woman who came holding three or four brown paper bags, from which she revealed 20 to 30 bottles of prescription drugs from her bathroom medicine cabinet. He then asked her to tell the class about the source, history, and results of each bottle. It gradually came clear that this is what happens when care is given by *the clinic* rather than by Dr X.

The central point of such sessions was to orient the student to the effects the context of practice has on what happens within that practice. Recently, he focused more on how to lower the cost of care. His proposal for primary care physician/nurse teams was central to it all, and for them to be paid on a capitation basis, referring selected cases to specialists who would be paid on a fee-for-service basis from the pool of money in the pocket of the primary care team. This proposal was made 20 years ago on a trial basis, but the trial was never born. It too closely approximated the HMO, and was too threatening in a state busily becoming overloaded with ever-increasing proportions of subspecialists.

Now it looks as though QUEST is in the process of trying out something close to what Fred was talking about 20 years ago. We are now launched into a large experiment; over time it could become something that makes good sense.

Vicki L. Shambaugh MA, MPH
Director, Research and Development
Pacific Health Research Institute

If it was important to do, could be done, but was going to be hard to do, then you knew we were going to do it. Our task was to make it happen.

For every project we were to think of the potential players in the community and invite them to combine their skills and experiences to the benefit of all. If we were going to make a real difference in health care, that was how it was going to be done!

Participatory research was not just some catchy phrase. Dr Gilbert believed in it as the only way to change health care. I can remember the number of site visits by federal managers and academic consultants who would question our approach and caution we would never get anywhere with this philosophy. It would simply take too long. It was great to work with the community but to have them take part in the actual planning of the project? Dr Gilbert believed, as did the staff he surrounded himself with, that the most effective dissemination comes from having the community involved from the very beginning so it became their project. They wanted the study to take place, they wanted to participate, and they wanted to know the results.

In the 15 years I worked with him, I was always told to treat each participating organization, medical center, or individual equally. No one got preferential treatment. Our specialty was research which involved bringing a team of individuals and organizations together to address a common problem. This required that we had their trust. They trusted and respected Fred Gilbert. That's what made the difference. A phone call from Dr Gilbert could open the door. It was never something he boasted about or took for granted. He had earned that trust and worked each day to retain it. Hard to earn but easy to lose.



PHRI staff at Dr Gilbert's farm in Kona—Vicki Shambaugh, Dr Gilbert, Allison Adachi and Wally Izumigawa.

And it was exciting to see and be a part of making it all happen. The midnight or 2 am evenings to get the grants done weren't our favorites, but there was never much time to pull everyone and everything together..

When I first started working with him, he was sitting across the desk from me developing a grant proposal. As I was talking with him I turned. Still hearing his voice, I turned back but he physically had disappeared. I stood up and looked over the desk to find him on the floor talking away about the proposal. He had a big-board surf meet the next morning and needed to practice jumping up on the board. Naturally, he could do that while we finished the grant, so we combined surfing practice with medical research.

Dr Gilbert always had a story to illustrate his point and put you at ease. Of course I would also get a few sheepish calls from other physicians asking if I could make sure that he was aware of the time available to present at various meetings and that the needed points were covered "because Fred sometimes, well you know, Vicki." But it will be all those stories that I will remember and forever picture not only what he said but the humor, warmth and skill with which he said it, whether it be the proper art form for catching flies or his first research project with the rabbits hopping all over the roof of the hospital. I was fortunate to have such a mentor not only professionally but in life in general.

Madeline J. Goodman PhD
Dean, College of Arts and Science
Vanderbilt University

Fred Gilbert and I worked together throughout my years in Hawaii. It all started in about 1971 when I was a graduate student in genetics at the University of Hawaii School of Medicine looking for large ethnic populations to study for my dissertation on the genetic aspects of diabetes. As the pioneer of multiphasic health screening in Hawaii, Fred was interested in putting his vast data source to use as a predictor of impending disease that might be prevented through timely life-style or therapeutic interventions. In the small back room office of the Pacific Health Research Institute, Fred and I plotted a general research design and method of operation that we would successfully repeat many times in the course of my cancer research in Hawaii.

Fred always thought big. Keeping administrative costs down to a level that would delight Newt Gingrich, Fred enjoyed planning massive research projects on a shoestring. He was never happier than when planning to study thousands of people for years and years. The Breast Cancer Detection Demonstration Project, on which I worked most closely with Fred, for example, screened some 10,000 women for five years and then followed them for another seven. The budget was huge for its time, but Fred insisted on stringent cost-saving measures. We would rent space from an insurance agency in the old Alexander Young building. The building was due for demolition, so the rent was low, and we could use the counters and built-ins left by the former tenant. Painting parties were organized to redecorate and spruce up the drab beige walls. An army of women volunteers from the American Cancer Society staffed the clinic, and much of the technical assistance came from physicians and academic researchers like me who faithfully donated our services as in-kind contributions. After the active screening years were over, the follow-up effort was moved to a second floor walk-up over a print shop on South King Street, and the mammography equipment was sent to the Waianae Coast Comprehensive Health Center for *pro bono* applications. Site visitors were so impressed by this combination of thrift and ingenuity that they never had the heart to cut one of Fred's proposed budgets. The dedication of the volunteers and staff was infectious. Anyone even remotely associated with one of Fred's big grants became an instant advocate of the research and would expound at length on its global value and long-term benefits to the people of Hawaii.

Fred loved to compete. Nothing gave him more pleasure than to sit down with a few of us and spin out a plan for some new research project. Trained in pathology, internal medicine, and nuclear medicine, he felt supremely comfortable in most areas of clinical research. With a wide acquaintance, great intuition, and confidence, he competed successfully for funding in nearly all branches of the National Institutes of Health. He never passed up an opportunity to prepare multiple research proposals on diverse health-related problems for the same NIH deadline. More often than not, all the proposals would be funded at once, creating a buzz in Honolulu medical circles and the impression in Washington that Fred's Pacific Health Research Institute was ten times its actual size. Fred's love of the hunt electrified the Institute. There was always one more grant to write and one more under review. Even Fred's leisure activities were competitive, as the trophy for the rough-water swim (senior division) attested.

Fred couldn't say no. Many times he took up the slack for community needs. One year, I recall, he headed up the Cancer Control unit of the University of Hawaii Cancer Center while keeping up his Straub practice and his directorship of the Research Institute. There always seemed to be room on Fred's schedule for another committee or conference presentation to communicate his views on the way medicine should be practiced and how it could become more efficient and effective. He could juggle several full-time careers and carry each of his roles with liveliness, creativity, strength, and determination. His well-

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Fred I. Gilbert, Jr., M.D.

our founding President and a Director since 1971

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developed sense of moral integrity and liberal outlook left a distinctive mark on the many local institutions he worked with professionally and privately. He enriched the community by his contributions to enhancing the standard of medical practice in Hawaii and far beyond.

It's hard to say how many people it would take to approach in quantity and quality the record of the professional life of Dr Fred Gilbert.

Colin C. McCorriston MD
Obstetrician/Gynecologist

My friendship with Fred Gilbert spans almost 50 years. He was not only a talented physician but a true humanitarian—brilliant and compassionate. His patients were always warmly treated and considered him a close confidant and true friend.

Fred's inquiring mind never let the status quo satisfy him—he sought and brought to fruition new and better ways to improve the health not only for his own patients but for all in the community. He extended his knowledge by returning for further studies in neurology at the National Neurological Institute in London (Queens Square) and in nuclear medicine at the University of California, Davis. He pioneered methods of using automation to make health care less expensive. His investigations into the value of mammograms in the early detection of breast cancer was one of the best early studies of this problem.

After Fred finished a year of surgical internship at Stanford, he did a year-long locum tenens for Dr Sam Brown in Hilo, covering a large general practice. A sugar mill worker caught his hand in a machine and mascerated it. Fred cleaned the wound and sewed up the tendons. Another man broke his hip. Fred pinned it. Both patients were later referred for follow-up to Dr Joseph Strode at Straub Clinic in Honolulu. Joe was so pleased with the outcomes he invited Fred to be on the surgical staff at Straub (Fred turned down the offer, later joining Straub after a three-year residency in internal medicine).

In the early 1950s one of my patients, a physician's wife, had a surgical procedure at Kapiolani Hospital. Shortly thereafter she developed abdominal pain and fever that confounded all diagnostic attempts. I called Fred in. He made the diagnosis of Mediterranean fever, the first such diagnosis in Hawaii.

An early glimmer of Fred Gilbert's social concerns occurred when he was a second year medical student at Stanford. He rounded up signatures from all of his classmates on a petition asking Governor Earl Warren to guarantee health insurance to every man, woman and child in California. Warren sent a copy to the medical school dean, Yank Chandler, who called Fred into his office and demanded, "Why didn't you show me the petition before sending it to the Governor?"

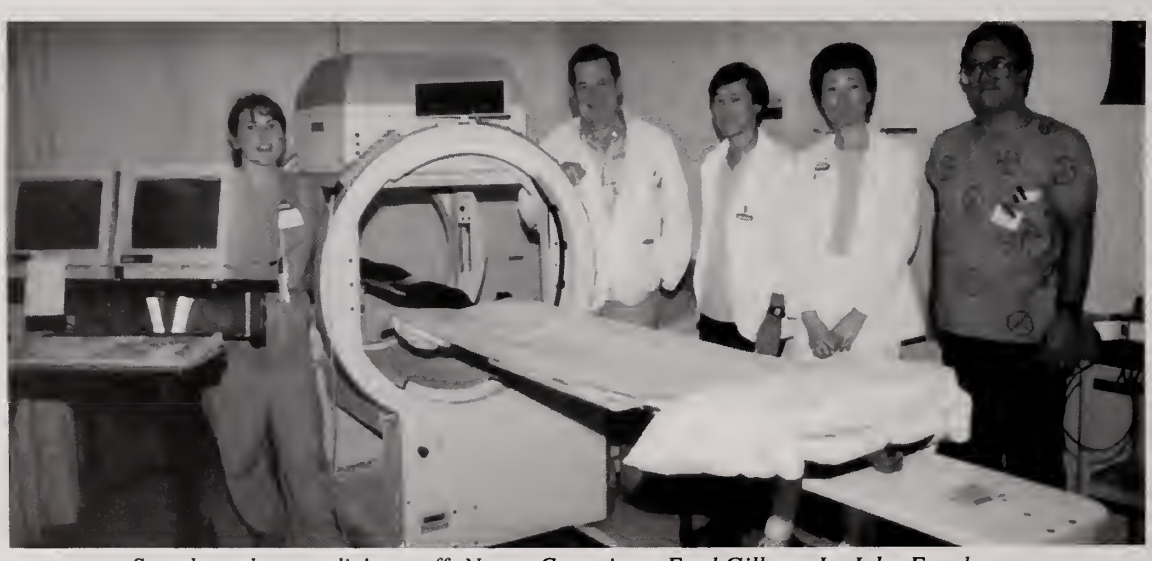
Fred replied, "Because you would have tried to stop me from sending it!" Years later Yank was visiting Fred in Hawaii. "How are you doing?" he asked. Fred started to tell him about his practice and research. "No, I don't mean that!" said Yank. "I mean, are you having fun like you used to at Stanford?"

Fred strongly believed that money should never be a physician's goal. With some relish, he told this story: Dr Clayton Mote, one of the most respected diagnosticians and teachers at San Francisco General, invited him with other fourth year medical students to his Marin County home for an evening's discussion about what it means to be a physician. As they were having drinks before dinner, Dr Mote had an interchange with one of the other students:

Mote: Have you decided what field of medicine you'd like to go into?
Student: Yes. One where you can make the most money and you don't get called out at night.
(Pause...)
Mote: Get out of my house!
Student, startled: What did you say?
Mote, angrily: I said, get out of my house. Now! And don't ever come back. I never want to see you again!

Fred was a man of many seasons and many interests—a devoted family man, a surfer who loved the waves, a coffee farmer, a man with a great sense of humor, a pusher who accomplished whatever he sought out to do with his charm and persistence. Above all, Fred was a true friend to his acquaintances and to his community.

Aloha, Fred, you are one in a million and will be sorely missed.



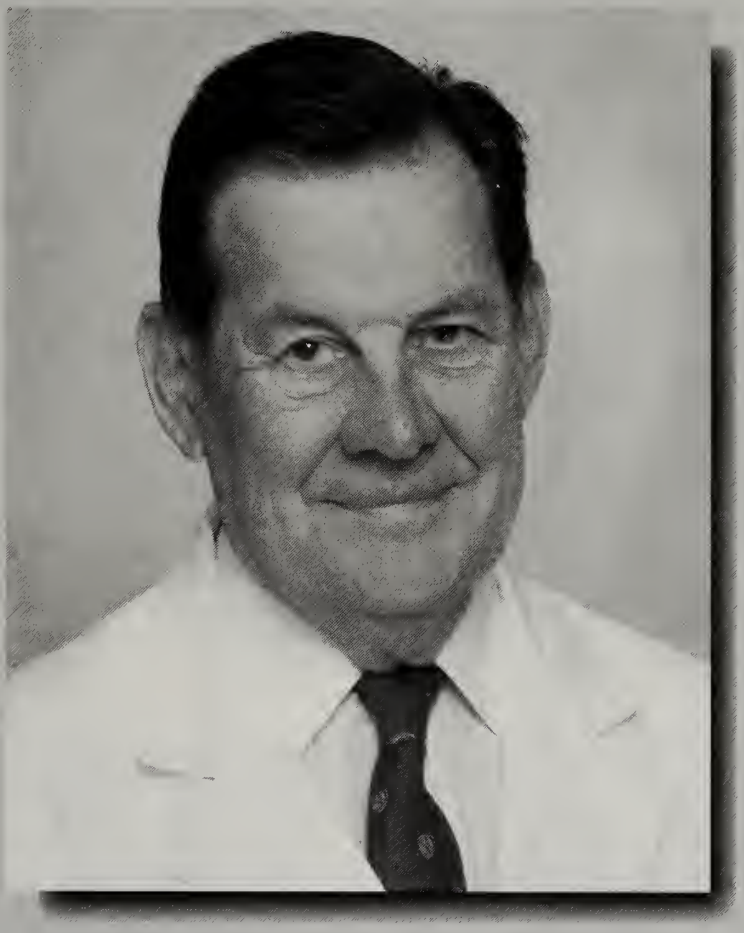
Straub nuclear medicine staff: Nancy Cummings, Fred Gilbert, Jr, John Furukawa, Lynette Kim, and Leighton Yin.

In Memoriam

Pioneer in Hawaii medical research

Outstanding physician

Respected colleague



Dr. Fred I. Gilbert, Jr.

1920 - 1995

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Introduction to Scientific Section

Robert A. Nordyke MD

The primary purpose of this festschrift issue of the *Hawaii Medical Journal* is to honor Fred Gilbert. Having worked closely with him as a professional colleague and friend for three and a half decades, I would be remiss not to share some of the principles and underlying philosophy of his remarkable life. Although he has accomplished an incredible amount of work for the benefit of patients all over Hawaii and the Pacific, most of the recipients have never heard his name.

From his scores of writings some have been selected that are representative and reflect his broad interests, convictions, and philosophy. In reviewing these, I am again reminded how visionary he was, how solid and sustaining his principles were, and how much of a pillar they provide to further improve health care in Hawaii.

In the hubbub of daily work, some of his precepts are overlooked but need constant reminders. In briefest form, they are:

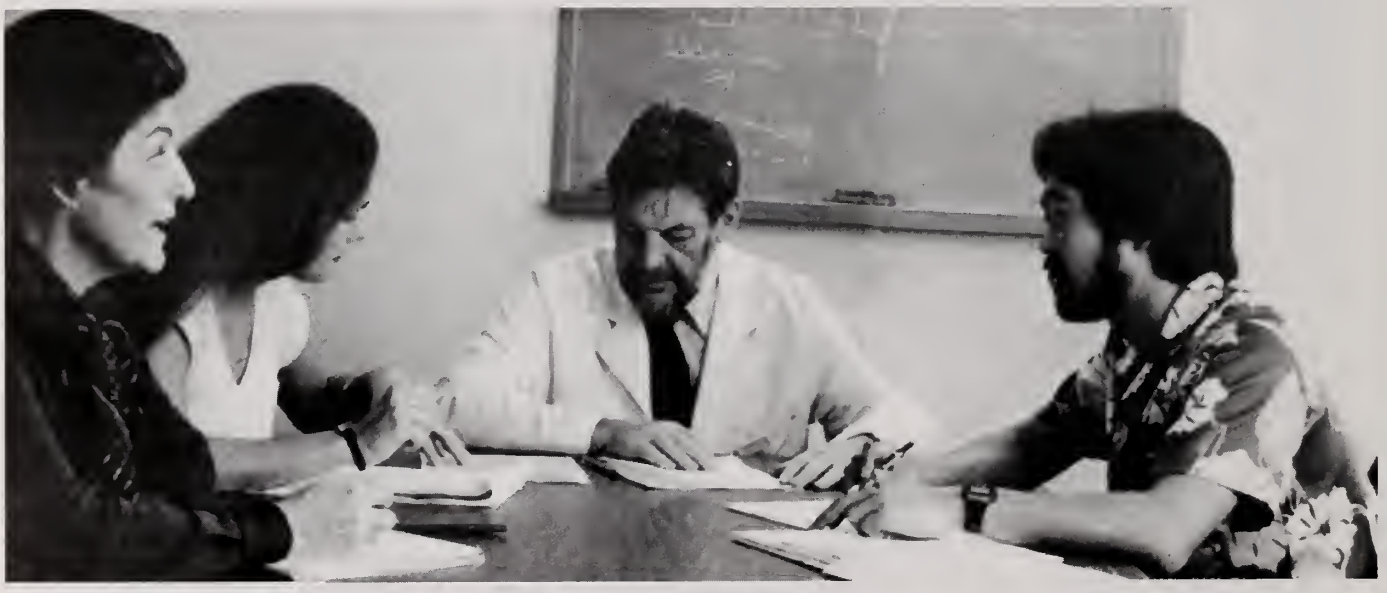
- a primary concern for patient outcomes, including satisfaction;
- recognition that research is a critical part of health care, not an ancillary add-on when it's convenient;
- community-wide inclusion and cooperation;
- awareness that health is intertwined with social and economic problems.

To bolster and sustain these principles, Fred believed we must:

- build the system around the patient, not the reverse;
- place primary care at the center;
- provide capitated health insurance to every person in Hawaii;
- involve patients more positively in their own decisions;
- carry out continuous research in every office and byway to improve quality and contain costs;
- extend research from basic and clinical to the broader area of health services;
- emphasize outcome over process;
- make leaps of improvement in addition to the incremental;
- develop more cost-effective mixes of personnel and technology;
- encourage creative thinking and risk-taking at every level;
- provide administration that is lean, cooperative and intercommunicative rather than bureaucratic and pyramidal; and
- partly for the fun of it, shake up the status quo.

To illustrate Dr Gilbert's precepts, we have included samples of papers written by him and his colleagues since the 1950s, divided into:

1) clinical research
2) health services research
3) the appropriate use of technology
4) the reorganization of health care
5) the search for excellence.



Core staff discussing a proposal. Left to right: Carla Connell, Secretary; Vicki Shambaugh, Director of Research and Development; Fred I. Gilbert, Jr, MD, Medical Director; Wally Izumigawa, Administrative Officer.

Clinical Research

Clinical Research *fuses indistinguishably into quality improvement. It is increasingly necessary because new medications and techniques are pouring down on us, with their potential for great harm as well as good. Dr Gilbert believed that every reflective health worker would constantly undertake research/quality control if she or he were not overwhelmed by a crowded practice, and that part of the difficulty lies in being too busy to consider how it could be improved. Discovery, he believed, consists of seeing what everybody sees and thinking what nobody has thought. But it takes time to contemplate, and reinvent.*

***Single case studies**, such as this 1962 analysis of Ilosone as a cause of hepatitis, remain an important type of research that can be carried out by any thoughtful physician as part of the routine practice of medicine. Dr Gilbert's report almost single-handedly stopped the indiscriminate use of a new antibiotic.*

Cholestatic Hepatitis Caused by Esters of Erythromycin and Oleandomycin

Fred I. Gilbert, Jr, MD

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Erythromycin is derived from a strain of Streptomyces and belongs to the macrolide family of antibiotics which include triacetyloleandomycin. Erythromycin was introduced in 1952.[1] Erythromycin propionate was introduced in September, 1958. Its lauryl sulfate salt has been named erythromycin estolate. The manufacturer estimates that some 15 million courses of therapy with this drug have been given since its introduction, with only 33 cases of jaundice having been reported as directly or indirectly attributable to the drug.[2]

Kuder, in reviewing 20,525 cases, noted that erythromycin propionate caused some type of gastrointestinal symptomatology in 5.7% of patients, whereas the lauryl sulfate salt of this drug (erythromycin estolate) caused only 2% to have gastrointestinal symptoms constituted the major side effects, with nausea leading the list. No jaundice or hepatitis was reported in this series. He also observed that of 69 patients less than one month of age receiving the antibiotic, there were no side effects except for loose stools in 2. Reichelderfer and associates[4] also observed that giving large amounts of erythromycin estolate to premature and newborn infants resulted in no significant side effects after several days of treatment.

More recently, Kohlstaedt[2] has received reports from physicians noting hepatitis in 13 patients treated with erythromycin estolate. In the more carefully studied patients, it appeared to be hypersensitivity rather than a toxic reaction. The initial symptoms of hepatitis appeared between the 10th and 21st day of continuous therapy or after repeated courses of the drug.

Robinson[5] also noted similar hypersensitivity with hepatitis in approximately 12% of the patients who received triacetyloleandomycin or erythromycin estolate for longer than 14 days. This reaction mimics viral hepatitis, cholecystitis, or pancreatitis, with midepigastric pain, vomiting, transaminase elevation, increased direct-reacting bilirubin, and a negative or weakly positive turbidity test. In some instances, serum alkaline phosphatase was elevated. Liver biopsy in one patient showed periportal infiltration with lymphocytes, a few polymorphonuclear leukocytes, and many eosinophils. Peripheral eosinophilia has been noted. It is of interest that hepatitis with jaundice had been previously reported in 3 of 82 patients receiving triacetyloleandomycin.[6]

Report of a Case

A 46-year-old physician was seen on September 13, 1961, after having taken 750 mg of erythromycin estolate during the previous 12 hours. When examined at about midnight, she was acutely ill, with severe epigastric pain radiating through to the back and both shoulders. She believed she was experiencing a myocardial infarction, while I considered biliary colic or pancreatitis as the cause of the upper abdominal pain, vomiting, and right upper quadrant tenderness. Subsequent events proved us both wrong: her serum amylase, gallbladder visualization, and electrocardiogram were all normal. The packed cell volume (PCV) was 43 ml%; hemoglobin 13.5 gm; white blood cell count 6,600 with 76% polymorphonuclear leukocytes, 18% lymphocytes, 2% eosinophils, 3% monocytes, and 1% stab cells. Urinalysis was normal.The serum glutamic oxalacetic transaminase (SGOT) was moderately elevated to 350 units (normal 40 to 80 units), but the thymol turbidity was normal at 2.5 units. For the first 4 days of hospitalization, the patient was miserable with persistent upper abdominal pain, vomiting, and anorexia. The afebrile course was interrupted on the third day of the illness by a fever of 102°F (39° C). This fever subsided within 24 hours, and she was discharged 9 days after admission, free of symptoms except for mild epigastric distress after meals and residual tenderness in the right upper quadrant on deep inspiration.

Further history disclosed that hives had developed after the patient had received penicillin several years before, but that she had taken erythromycin sterate for 4 days in May, 1961, without incident. Three erythromycin estolate capsules had been taken on September 13, because of a tooth extraction that day. There was no other history of drug sensitivity, asthma, hay fever, or other know allergy (Fig 1).

On October 31, 1961, she came into the office desperately ill, with fever of 104°F (40° C), chills, nausea, vomiting, and abdominal pain so severe that she could not tolerate abdominal palpatation until after injection of 100 mg of meperidine hydrochloride. This time she had taken one 25-mg capsule of erythromycin estolate after further dental work and had noted abdominal pain at 3 hours, chills and fever at 8 hours, and vomiting at

10 hours after the single dose. She was extremely sick and noted a peculiar disturbance of color vision, with red, yellow, and green vertical bars, on closing her eyes. There was also an unusual sensation of tumbling vertigo, and for several days there was
persistent yellow tinting of the central visual field. She had continuous headache, upper abdominal pain, and repeated attacks of vomiting for the past 3 days. During this period, intravenous fluids were required. Thirty-six hours after the onset, she became afebrile and remained so until discharge on November 4, 1961 (Fig 1).

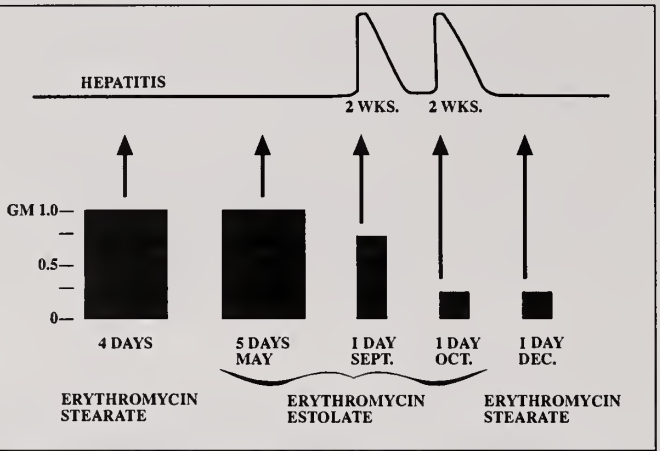


Fig 1.—Patient's response to administration of erythromycin estolate.

Laboratory studies performed during this second episode showed increased serum bilirubin, with total bilirubin of 2.4 mg%, 1.1 mg% direct-reacting. The SGOT was elevated to 91 units. There was a slight increase in the serum alkaline phosphatase to 4.7 Bodansky units. Blood studies revealed a drop in the hemoglobin, PCV, and (except for eosinophils) granulocyte, as compared to the values obtained 2 weeks previously (PCV 35 ml%,; hemoglobin 11.9 gm; white blood cell count 4,700 with 52% polymorphonuclear leukocytes, 33% lymphocytes, 6% eosinophils, and 9% monocytes). A radio-rose bengal test done 4 days after onset of acute symptoms indicated moderate liver dysfunction without biliary tract obstruction. The radio dye flowed into the intestine readily. Urinalysis, including qualitative tests for bile and urobilinogen, was normal. The thymol turbidity was 2 units.

By November 7, 1961, one week after taking the capsule, the patient was asymptomatic except for acute iritis of the left eye and epigastric distress after meals. On November 18, she had no symptoms. Scratch tests with erythromycin as the base, stearate, estolate, and controls were negative at 1, 24, and 72 hours. The SGOT, serum bilirubin, and blood cell count were normal. The PCV was 38 mil% white blood cell count 5,600, with 56% polymorphonuclear leukocytes, 37% lymphocytes, and 7% eosinophils, and the radio-rose bengal test continued to indicate very slight liver dysfunction with 56% retention in 20 min.

On December 5, 1961, after having taken a small test dose of less than one-quarter of a 250-mg tablet of erythromycin sterate the night before, the patient took the remaining portion of the tablet. No unusual signs or symptoms developed and 24 hours later, all laboratory studies, including SGOT, and radio-rose bengal, were within normal limits.

Comment

This 46-year-old physician tolerated a 4-day course of erythromycin sterate in 1957 and a 5-day course of erythromycin estolate in May, 1961. Neither of these courses of treatment caused symptoms, but the latter almost certainly sensitized her, so that a challenge dose of the same preparation administered on 2 subsequent occasions cause symptoms and signs of hepatitis within 12 hours of erythromycin ingestion. Her second challenge of only 250 mg of erythromycin estolate caused a much more severe illness than the first challenge of 750 mg. A final challenge of 250 mg of erythromycin sterate resulted in no clinical or laboratory evidence of hepatitis.

This case is similar in most respects to the one recently reported by Johnson and Hall.[7] In their patient, cholestatic hepatitis developed after 12 days of erythromycin estolate. Three challenges with the estolate reactivated signs and symptoms of hepatitis. A final challenge with erythromycin base failed to produce hepatitis. They concluded that drug allergy was the cause of the hepatitis.

Although clinical jaundice develops in less than 5% of patients receiving macrolide ester antibiotics, routine sulfobromophatalein (BSP) and SGOT determinations carried out on patients receiving triacetyloleandomycin for longer than 10

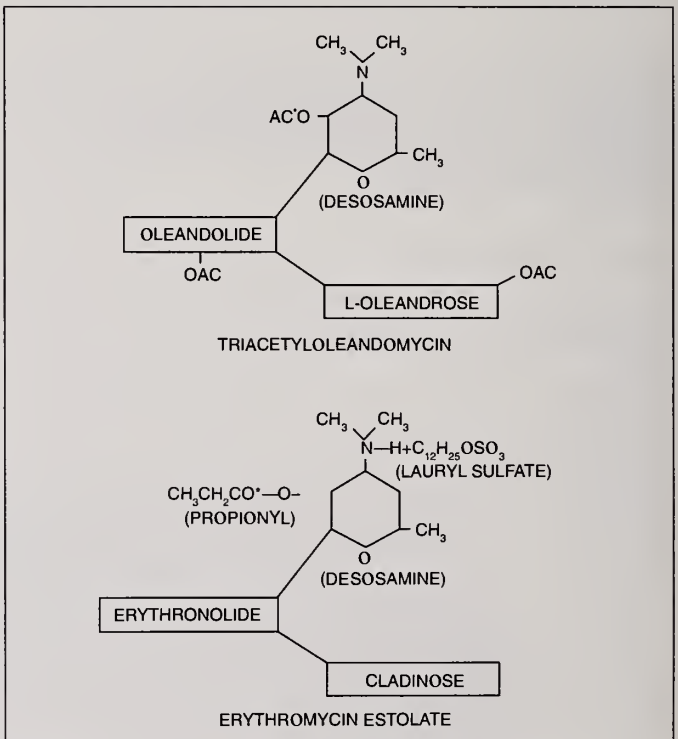


Fig 2.—Comparison of formulas of erythromycin estolate and triacetyloleandomycin. Asterisks indicate position of desosamine OH group in both antibiotics.

days indicate that subclinical hepatitis develops in approximately 50% of patients receiving the drug. In 3 of 4 patients with abnormal liver function tests, elevated SGOT and elevated BSP values developed within 24 hours of a challenge dose of triacetyloleandomycin. These results were sufficient to cause 2 drug companies reporting this high incidence of occult hepatitis to revise their brochures and suggest that their products not be used for longer than 10 days.[8,9] The significance of the challenge

dose producing hepatitis within 24 hours of administration has been almost overlooked, for there is no word of caution regarding a second course of the antibiotic. As yet, no comparable studies with erythromycin estolate have been reported, but it is anticipated that the results will be similar. The appearance of cholestatic hepatitis in patients receiving the macrolide antibiotics, triacetyloleandomycin and erythromycin estolate, is too much to expect coincidence. The parent molecules, oleandomycin phosphate and erythromycin, have not produced hepatitis. Triacetylation of oleandomycin phosphate and propionylation of erythromycin results in preparations that are more effective antibiotics. At the same time, the new compound acquires the capacity to cause hepatitis.

On turning to the chemical formulas[10-12] (Fig 2) in an attempt to explain the sensitization property (Fig 2) of the esterified molecules, it is observed that erythromycin and oleandomycin phosphate differ as to their macrocyclic lactone nuclei and one of their side-chain sugars. The second side-chain "sugar," desosamine, is the same in both antibiotics. When the molecular position marked with an asterisk is represented by a simple OH group in either antibiotic, hepatitis does not occur; nor does it occur when stearate is added proximal to the single nitrogen atom in desoamine.

Only when the OH at the positions marked by asterisks is replaced by the propionyl radical in erythromycin and by the acetyl radical in oleandomycin phosphate do these macrolide antibiotics acquire the capacity to cause hepatitis. In all probability, other acids similarly linked to macrolide desosamine would provoke similar hypersensitivity and hepatitis, but with the specificity of the immune response residing in the specific acid radical.[13]

It has been suggested[14] that esterification at the molecular position indicated confers the properties of a haptene on the macrolide molecule. This chemical alteration may permit the antibiotic to become antigenic by enabling it to conjugate with the necessary body protein, or more likely provides the signal by which the individual's cellular clones recognize the antibiotic as "not self." In any event, administration of the esterified antibiotic to a susceptible individual starts the chain of events that may lead to the hypersensitivity response. Once this occurs, all that is now necessary to produce cholestatic hepatitis is a properly timed triggering dose of the antibiotic in the primed hypersensitive individual.

Summary

The macrolide antibiotics erythromycin and oleandomycin, incapable of causing hepatitis in their basic form, apparently acquire this capacity by esterification of their desosamine side chains.

Although abnormal liver function developed in approximately 50% of patients receiving triacetyloleandomycin for longer than 10 days, clinical jaundice developed in less than 5%. Because of the high incidence of liver function abnormalities following the use of triacetyloleandomycin, 2 drug firms have advised that this product not be used for longer than 10 days. It appears advisable to observe similar precautions in the use of erythromycin estolate until appropriate investigation has excluded the possibility of high incidence of subclinical hepatitis. It is also suggested that a second course of either of these macrolide esters be used with extreme caution, if at all.

I am grateful to my patient, Dr Emiko Sakurai Hirschy, who recognized the potential hazard of reexposure to the antibiotics studied, yet deliberately accepted the risk in order to gain more information about this hepatosensitivity.

Generic and Trade Names of Drugs

Triacetyloleandomycin - Cyclamycin, Tao.
Erythromycin estolate - Ilosone.
Erythromycin stearate - Erythocin Stearate.
Meperidine hydrochloride - Demerol Hydrochloride.
Oleandomycin phosphate - Matronycin.
Erythromycin - Erythromycin, Ilotycin.

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Combining patient information. *The step beyond single case reports is to combine information from many patients in one or more practices. This is especially important if the answers vary in different practices, laboratories, or (so common in Hawaii) ethnic groups. The next papers describe the outcomes from some of the innumerable questions that cry out for solution, that would improve the health of our patients if known, and that can best be answered by ourselves.*

Dr Lynn Madanay tells this story about the following article: Several recent publications suggested that prostate-specific antigen (PSA) gradually increases with age in men without prostate cancer, and therefore laboratories should report age-adjusted normal limits. Pressure was put on Lynn to consider changing the standards in his laboratory. He and Fred Gilbert were discussing whether to make those changes when Fred suggested that they find out whether the age-adjustments obtained from mostly Whites at Mayo applied to our own laboratory and to our own ethnic populations. In three days Fred dropped on his desk a 16-page proposal, budget and all, ready for signature. A week later funds were available, and within three months the analysis was made, paper written, and presentation given at the American College of Physicians' Annual Scientific Meeting in April, 1995.

Prostate-specific Antigen Concentration: Influence of Age and Ethnicity

Lynn D. Madanay MD, David B. Johnson PhD, Linda A. Miyamoto BS,
Fred I. Gilbert, Jr, MD

This pilot study evaluated the influence of age and ethnicity on serum prostate-specific antigen (PSA) concentration in Asian and white men without a clinical diagnosis of prostate cancer. Between October and December 1993, 1260 patients who underwent serum PSA determination (Hybritech Tandem-R assay, San Diego, California) at Straub Clinic & Hospital were retrospectively analyzed. Of these, 885 (70%) men aged 40 to 79 years were either Asian (Chinese, Filipino, Japanese, and Korean) or white and had a serum PSA less than 10.0 ng/ml. The PSA for the entire group was 2.1 +/- 2.0 ng/ml (mean +/- SD). PSA correlated with age (r=0.31, p=0.0001) and age accounted for 10% of the variance in serum PSA. Using the regression formula, serum PSA increased 2.5% (0.06 ng/ml) per year of age. The entire study group was about equally divided between whites (49%) and Asians (51%). Nearly three-fourths of the Asian men were Japanese. The mean PSA was very close in the Asian and white groups. There was no direct correlation between serum PSA and ethnicity (r=0.03; p=0.3201). Ethnicity contributed 0.1% of the variance in PSA. In conclusion, this preliminary study suggests serum PSA increases with age in Asian and white men without a clinical diagnosis of prostate cancer. No difference was found in PSA between men of Asian and white ethnicity.

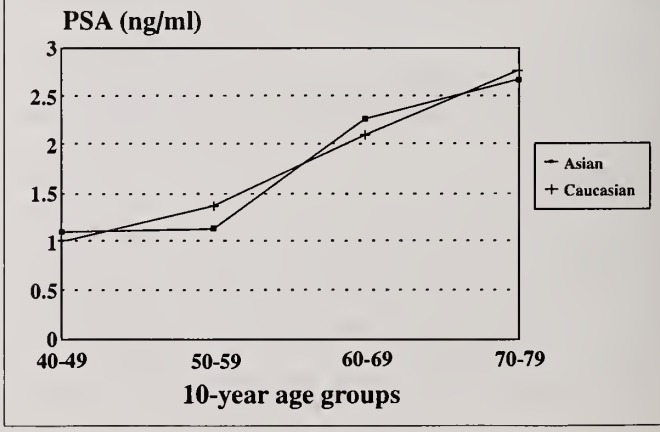
Introduction

Prostate carcinoma is an increasing medical problem in the United States. Prostate cancer is the most frequent nonskin cancer among men in the U.S., with 244,000 new cases and 40,400 deaths estimated for 1995.[1] In Hawaii, 790 new cases and 140 deaths are estimated for this year. Prostate-specific antigen is a protease secreted almost exclusively by the prostate epithelium. Blood levels are increased when normal glandular structure is disrupted by benign or malignant tumor, inflammation, or trauma due to cystoscopy or biopsy. The serum PSA level is directly proportional to tumor volume, with a greater increase per unit volume of cancer compared with benign prostatic hyperplasia.[2] However, PSA is not sufficiently sensitive or specific to be the ideal method of screening for prostate cancer. Approximately 25% of men with benign prostatic hyperplasia have an elevated serum PSA level.[3-4] Conversely, not all prostate cancers give rise to an elevated serum PSA concentration. Approximately 40% of men with organ-confined prostate cancer who undergo radical prostatectomy for potential cure have a normal serum PSA value using the conventional reference range.

The standard normal reference range for PSA (Hybritech Tandem-R assay, San Diego, California) is 0.0-4.0 ng/ml. Myrtle et al derived the upper limit of normal in a population of 472 apparently healthy, asymptomatic men.[5] No PSA values exceeded 10.0 ng/ml and 99% were less than 4.0 ng/ml. All men less than 40 years of age and 97% of men 40 years or older had a serum PSA less than or equal to 4.0 ng/ml. Recently Dalkin and co-workers conducted a study to refine the upper limits of PSA by age in men older than 50 years.[6] The new upper limits were 3.5 ng/ml for the 50-59 year old group, 5.4 ng/ml in the 60-69 year old, and 6.3 ng/ml in the 70-79 year old men. Oesterling and colleagues also suggested a revision with age-specific reference values for serum PSA.[7] The recommended upper normal values were 2.5 ng/ml for men 40-49 years, 3.5 ng/ml for 50-59 years, 4.5 ng/ml for 60-69 years and 6.5 ng/ml for 70-79 years.

The influence of ethnicity on serum PSA has not been well-studied. Oesterling's study was limited to a population of white men.[7] The possible link between PSA and ethnicity is suggested by data demonstrating differences in incidence and death rates

Fig. 1.—Mean serum prostate-specific antigen concentration by 10-year age groups for Asian and white men.



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between Asian, black, Hispanic, and white populations.[1,8] As Asians represent the fastest growing minority group in the U.S., PSA normal value recommendations should be examined within the context of different ethnic groups in order to ascertain the effects of both age and ethnicity variables. This is especially important as the use of serum PSA values increasingly influence recommendations regarding referral and follow-up procedures for the diagnosis of prostate cancer. This pilot study was designed to assess the influence of age and ethnicity on serum PSA concentrations in Asian and white men living in the U.S. without a clinical diagnosis of prostate cancer.

Methods

Patients

Between October and December 1993, 1260 men who had serum PSA (Hybritech Tandem-R assay, San Diego, California) determinations at Straub Clinic & Hospital Department of Nuclear Medicine Radioimmunoassay Laboratory were initially identified as the cohort population. Patient name, age, and PSA concentration were obtained from the computer Laboratory Information System. The ethnicity of the patient was identified from the clinic and hospital computer demographic and schedule tracking system. The clinical diagnosis pertaining to disease of the prostate was obtained from review of each patient's clinic chart. Men who had a PSA value less than 10.0 ng/ml and who had no diagnosis of prostate cancer were selected for analysis. Ethnic categories included Asian and white men. Asian included Japanese, Korean, Filipino, and Chinese. Those who had mixed ancestry among these groups were included as Asian. Those who had mixed ancestry between any of these groups and other groups were not included in the study. Anyone with mixed ancestry between white and other groups was also not included. The final population sample consisted of 885 (70%) men aged 40 to 79 years.

Table 1.—Serum PSA Concentration and Patient Distribution by Age*

Age (years)	Patient No.	PSA (ng/ml)	
40 - 49	71	1.03†	(1.01, 1.06)‡
50 - 59	215	1.24	(1.23, 1.26)
60 - 69	323	2.17	(2.16, 2.18)
70 - 79	276	2.08	(1.68. 2.70)
Total	885	2.08	(1.95. 2.21)

*PSA indicates prostate-specific antigen
†Mean value
‡Numbers in parenthesis are the lower and upper values for the 95% confidence interval

Table 2.— Serum PSA Concentration by Age and Ethnicity*

	Asian		White	
Age Group	PSA (ng/ml)	95%C.I.	PSA (ng/ml)	95%C.I.
40 - 49	1.10†	(1.03, 1.17)‡	0.99†	(0.94, 1.03)‡
50 - 59	1.13	(1.11, 1.15)	1.36	(1.34, 1.38)
60 - 69	2.24	(2.22, 2.68)	2.09	(2.07, 2.11)
70 - 79	2.66	(2.65, 2.68)	2.73	(2.71, 2.75)
Total	210	(2.10, 2.11)	2.05	(2.05, 2.06)

*PSA indicates prostate-specific antigen
†Mean value
‡Numbers in parenthesis are the lower and upper values for the 95% confidence interval

Statistical analysis

Regression analysis was accomplished with the Statistical Analysis System (SAS) software, Regression Procedure, using the multiple regression and stepwise regression models with PSA as the predicted (dependent) variable and age and ethnicity as predictor (independent) variables. The PSA values were log (natural) transformed in order to better meet the linear assumptions of the regression model. The regression procedure calculated the Y intercept and the slope of the regression line. From this information it was possible to compute the predicted increase in PSA per year of age, both in absolute and relative terms. The software also calculated the multiple regression coefficient squared which indicates the proportion of the variance in PSA that is accounted for by age and ethnicity. The SAS Correlation Procedure computed the Pearson product moment coefficients of correlation (rho). This allowed paired comparisons of PSA and age and PSA and ethnicity. A p=0.05 was considered significant. The SAS software also calculated PSA means by different age and ethnicity groups and determined the cross-tabulations used in the analysis with 95% confidence intervals.

The mean + 2 SD was used as the upper limit of the estimated ranges for the serum PSA concentration for each 10-year age group.

Results

The PSA for the entire group of 885 men was 2.08 ± 2.0 ng/ml (mean +/- SD) (Table 1). The mean serum PSA concentration for each 10-year age group increased with age at the 95% level of confidence. Between 40-49 years, 2 (2.8%) had a serum PSA greater than 4.0 ng/ml; between 50-59 years, 5 (2.8%); between 60-69 years, 51 (15.8%); and between 70-79 years 69 (25.7%) had a serum PSA above 4.0 ng/ml. Overall, 127 men (14.7%) had a serum PSA greater than 4.0 ng/ml. PSA correlated with age (r=0.31; p=0.0001). Age accounted for 10% of the variance in serum PSA (p=0.0001). Using the regression formula, serum PSA increased 2.5% (0.06 ng/ml) per year of age.

The study group was about equally divided between white (49%) and Asian (51%) cases. Nearly three-fourths of the Asian men were of Japanese ethnicity. There was no direct correlation between serum PSA and ethnicity (r=0.03; p=0.3201). Ethnicity accounted for only 0.1% of the variance in PSA. Mean serum PSA for each age-specific group increased with age in both the Asian and white men (Fig 1). For age groups 40-49 and 60-69 years, mean PSA for the Asian cases was higher than white at the 95% level of confidence; for age groups 50-59 and 70-79 years, for white men were higher than Asian (Table 2). The age and ethnic-specific serum PSA ranges are shown in Table 3.

Discussion

Reference ranges for serum PSA in the published literature were derived from various populations of healthy men without clinically evident prostate cancer.[5-7] The validity of these parameters for the detection of early, and potentially curable prostate cancer have not been well-studied among the Asians. A possible link between PSA and ethnicity was suggested by a study conducted by Christmas, where the incidence of prostate cancer

Table 3.—Serum PSA Ranges by Age and Ethnicity*

Age Group	Total PSA (ng/ml)	Total S.D.	Total Range	Asian PSA (ng/ml)	Asian S.D.	Asian Range	White PSA (ng/ml)	White S.D.	White Range
40 - 49	1.0†	0.7	0.0 - 2.4‡	1.1†	0.7	0.0 - 2.6‡	1.0†	0.6	0.0 - 2.2‡
50 - 59	1.2	1.0	0.0 - 3.3	1.1	0.8	0.0 - 2.7	1.4	1.3	0.0 - 3.9
60 - 69	2.2	2.0	0.0 - 6.1	2.2	2.0	0.0 - 6.2	2.1	1.9	0.0 - 5.9
70 - 79	2.7	2.3	0.0 - 7.2	2.7	2.2	0.0 - 7.0	2.7	2.4	0.0 - 7.4
All Ages	2.1	2.0	0.0 - 6.0	2.1	1.9	0.0 - 60	2.1	2.0	0.0 - 6.0

*PSA indicates prostate-specific antigen †Mean value ‡Range upper limit is mean + 2 S.D.

was shown to be particularly common among blacks in the U.S. and among Scandinavians, but rare among Japanese and other Asians.[8] More recent cancer statistics show that age-adjusted death rates for prostate cancer reported between 1988-1991 were highest in Switzerland, Sweden, and Norway and lowest in Japan, Hong Kong, and China.[1]

The increase in PSA with age demonstrated in this study has been observed by other investigators.[5-10] There was no consistent difference in serum PSA between Asian and white men without a clinical diagnosis of prostate cancer. PSA did not correlate with ethnicity (r=0.03, p=0.3210) and ethnicity was not predictive of PSA (0.1% of the variance). From a practical standpoint, the mean PSA levels were nearly identical overall for the Asian and white men. The age-specific range of PSA values for the two ethnic groups were very similar. Statistical differences between Asian and white PSA levels fluctuated for the age-specific groups and there was no consistent trend.

The retrospective, cross-sectional nature of our study is inappropriate for deriving reference ranges for PSA concentrations. Although patients with a diagnosis of prostate cancer were excluded from the study, the sample population cannot be considered healthy and prostate cancer-free. The fraction of patients with an abnormal PSA using the conventional cutoff value of 4.0 ng/ml and no clinical evidence of cancer by digital rectal examination (DRE), transrectal ultrasonography (TRUS), and prostate biopsy is unknown. In addition, patients with a normal DRE and PSA cannot be excluded from harboring prostate cancer. The significant expense of TRUS makes its use in the routine evaluation of patients with normal PSA and DRE impractical in the clinical practice at the study institution.

The investigators of this study attempted to decrease the level of uncertainty of undiagnosed prostate cancer cases by excluding patients with PSA greater than 10 ng/ml in our final analysis. The rationale for this rests on the observation that individuals with such values distort the true population of normal men at large.[9] In addition, men with values substantially greater than 10 ng/ml, and certainly values reaching the hundreds, have a higher likelihood of prostatic cancer. [6,10]

The study population was selected from an arbitrary fixed time frame. This permitted a sample of the large patient population at the clinic and hospital undergoing a PSA test. The inherent biases of the cross-sectional study applied across the Asian and white groups and still permitted a valid comparison of the two groups. The inclusion of men with a PSA greater than 4.0 ng/ml but with prostate cancer not yet diagnosed could inflate the calculated mean PSA values and ranges; the effect on the correlation and regression analysis values would be slight in the estimation of the authors.

Data on patient prostate size were not included in this study. Adjustment of the serum PSA for the size of the prostate gland may help to distinguish men with early prostate cancer from those with benign prostatic hypertrophy.[11] An ancillary study proposal to the National Cancer Institute Prostate, Lung, Colon, and Ovary cancer screening trial evaluating the the relationship between PSA, prostate size, and ethnicity in patients from Hawaii was recently approved for the investigators of this study.

Serum PSA is currently the most useful tumor marker for the diagnosis of prostate cancer, and is a potentially important screening test. Intensive efforts by researchers to identify cost-effective screening strategies incorporating the PSA test are ongoing. This preliminary study contributes to the understanding of PSA variation among individuals at risk for prostate malignancy with respect to ethnicity.

In summary, PSA increases with age in Asian and white men without a clinical diagnosis of prostate cancer but who are at risk for malignancy. No apparent difference was found in serum PSA between Asian and white men.

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Computers. *Very early Fred sensed the potential of computers in clinical research, and argued that they should be used directly in patient care rather than being limited (as they were then) to business activities. Here are some of his early statements.*

Computers in Medicine: Emergence of a New Technology

by Fred I. Gilbert, Jr, MD

Reprinted from *The Internist.* Dec 1978-January 1979;19.

In the late 1950s, physicians began to consider the potential of high speed electronic computers with possible application to their day-to-day practices. Throughout the next decade, in a surge of research activity, computer firms, academic and practicing physicians, and even pharmaceutical houses sought to adapt this new tool to the practice of medicine. Practitioners attending medical meetings during the 1960s were a bit surprised, and often fascinated, to find computer-driven typewriters producing long printouts in the drug firm exhibit booths.

Despite impressive displays, enthusiasm for using the computer in diagnostic procedures was dampened by the realization that, if a physician diagnosed an exotic disease rarely encountered in practice, the computer would not be of much use in determining what confirmatory tests were needed. Other drawbacks became apparent. The *high-speed printers* were not that fast. They were also very noisy. The printouts were foreign to most physicians, with capital letters throughout. The programs and program languages were far beyond the understanding of most physicians and there was no way that he or she could write a program, or even modify an existing one.

By the early 1970s, the lively interest of both physicians and suppliers of the hardware and software had lessened—at least regarding the applications of computers to office practice.

Success in Clinical Labs

In other areas of medicine, however, computers have flourished. Clinical laboratories have made extensive use of computers. Blood counts are rarely made manually these days and small dedicated computers assist in the performance or reporting of numerous laboratory procedures. Business offices in outpatient and inpatient settings use computers extensively to link charges with diagnoses and procedures. In some settings, particularly in group practices, business office computers are linked directly to insurance carrier computers without bits of paper going back and forth between clinic and insurance carrier.

Coronary care units and intensive care facilities utilize computers to monitor heart rate, blood pressure, central nervous pressure, etc. Visual and auditory alarm signals are triggered if set limits are exceeded. The most dramatic use of computers in the past few years, of course, is in CAT scanning. Anatomic images are constructed from computer-analyzed data recorded for either x-ray beams transmitted through tissues or gamma rays emitted from organs under study.

New advances, new uses

The use of computers by physicians in their daily practices has been stimulated recently by technologic improvements—higher speed, quieter printers with upper and lowercase letters in printouts that closely resemble what a physician is used to seeing and microcomputers that use less space, cost less, and operate at high speed. More flexible, easy-to-use computer languages permit physicians, with minimal instruction, to write and modify their own programs and allow a new generation of physicians to be exposed to computers throughout undergraduate and medical school. Many of them have received part of their education and have taken examinations by computers interacting with various display devices.

Medical audit programs (MAP) have been used for years in most major hospitals in the United States to audit certain in-hospital procedures. Increasingly stringent legislative requirements to support diagnoses, procedures, and length of hospital stay by legible records has stimulated use of computers for at least part of these activities—particularly by physicians who have waded through hospital charts as part of their PSRO stint.

The complete computer-based record for inpatients and outpatients is still more than a little way down the road. A more limited database, including critical information such as diagnoses, procedures and results, and therapeutic outcome is within reach, and many institutions are collecting and storing portions of this data base in a useful, retrievable manner.

We have come a long way since the loud, unwieldy, and slow computers of a few decades ago. Physicians must be willing to work with developers of this new technology to see that it meets the needs of medicine.

The Ups and Downs of Computers

Fred I. Gilbert, Jr, MD

Reprinted from *The Internist:* Health Policy in Practice, American Society of Internal Medicine. 1980;21:8-9.

In the mid-1960s the computer-based medical record was just around the corner. For most internists, it still is. Why has it taken so long? It certainly hasn't been lack of research and development funds. Industry and the federal government have spent millions to develop the software and hardware needed for computerized medical record systems. It hasn't been lack of effort by capable and dedicated people like Colleen, Weed, Barnett, Hall, Oldfield, and many others. It hasn't even been internists' reluctance to entrust their most valuable tool, the medical history, to the computer; nor is it their reluctance to accept new technology. The rapid acceptance of CT scanning, radionuclide testing, and ultrasound procedures bear witness to the internist's ability to understand and use the new tools to really prove helpful in defining a patient's problem or assisting in care.

High Cost of Computers

Since the computer deals with numbers much better than with words, a major difficulty has been the nature of the medical record itself. It is obviously more complex than the financial record, which has successfully been transferred to the computer in many settings. For the medical records, many more charac-

ters, with far greater storage capability and more extensive programming are required, all at a much higher cost.

The problems inherent in the updating of medical records are also much more complex than updating financial records. There are also other, more subtle difficulties in communicating with the computer, but cost is, or has been, the principle culprit.

The computer-based medical record is, at best, only marginally cost-effective. Portions of the medical record, particularly the reporting of procedures and tests, can be handled cost-effectively by computers. However, the complete medical record—history, physical, lab data, identification of solutions—is much more complicated and considerably more expensive for a computer to capture and to print in an acceptable form.

Here in Hawaii, our efforts to apply the computer to the medical record have produced a road map complete with the frustrations, detours, and successes for any who wish to travel in the same direction. With or without a map, we would not recommend repeating the entire trip. In 1967 we produced an off-line punch card computer-assisted medical record for use in an automated multiphasic health testing system in a multispecialty group practice (The Straub Clinic in Honolulu). This was similar in many respects to Dr Morris Collen's system at Kaiser Permanente in Oakland. The cost was fairly reasonable, but the turnaround time was too slow, and the printout reflected its source; an obviously mechanical series of disjointed statements. Two years later we moved to an on-line system developed by Oldfield and his group near Boston (Medidata-Searle). This was considerably more costly but had an almost immediate turnaround time. The reports generated more closely resembled the traditional record, but we were never congratulated by our fellow physicians on a well-turned phrase or solicitous syntax.

Problems Encountered

The computer programming and hardware limitations that we encountered made it a major problem to modify what went in and came out. The physicians at our clinic correctly recognized that they had little control over the medical record; after a decade they abandoned it and now use a self-administered medical history with only limited portions of the medical record assisted by the computer.

Dr Robert Nordyke has worked out a successful cost-effective computer reporting system for nuclear medicine procedures. Since this is an on-line system with immediate turnaround, reports can be signed and entered in the record right after the test is completed. Access to the computer occurs through an input-output terminal in the department.

After closely observing the cost and other limitations of our complete medical record system over the past decade, Dr Robert Worth, professor of public health at the University of Hawaii, has developed a computer-assisted medical record and billing system[1] that has been field-tested in a small group practice in Berkeley, California and in the family practice department of the Kaiser group here in Honolulu. It may prove to be the most cost-effective of any system developed thus far. It produces a mini-computer hybrid record (part computer—part paper) designed primarily for outpatient office practice.

Deciding on the Computer Route

Computer-based medical records are still just around the corner, and the corner is closer than it was 15 years ago. If internists believe their medical records might be helped by the use of the computer, it is necessary to research the subject just as they would if they were confronted with an unfamiliar disease or a perplexing medical problem. That would be to ask an expert consultant for help or to go the available literature, or both. Joan Zimmerman PhD has neatly summarized the necessary steps that a physician should take before seriously considering purchase of necessary hardware and software in a recent *JAMA* article, "Are Mini-computers Appropriate for your Practice?"[2] If the internist stays in practice long enough, that decision eventually will have to be made.

1. Worth RM. An integrated computer-assisted medical record and billing system. *Medical Group Management.* 1978;25;42-50.
2. Zimmerman J, Boxerman SB, Rector AL. Are Minicomputers appropriate for your practice? *JAMA.* 1979;242;1887-1890.


```
F A M I L Y   H I S T O R Y ---- typed on 2/15/80
**************************  SAMPLE/Patient Q.        #1234 56

     MGM:89* ?          MGF:93* r          PGM:60* n          PGF:70*
             ___________                           ___________

A U-ALcOH AStHF ^BlDS ^Bp-- brCan CAnCR drAbu GL'CO HEaRT OBeSE
U N#                                                        2
N C-^lPid MI<40 m.Ill m.Ret SToNE STrOK SUiCI THyRO TUbER GOuT-
T L#
S E

                Mother:40* a ____        Father:75* n
                                |
Siblings-  M22           F25 e          F23*          +0 more.
Spouse---   30
Children-  M56           M58                           +  more.

     Comments: Cancer cluster on father's side.


P A T I E N T   P R O F I L E ---- updated 2/80
**************************  SAMPLE/Patient Q.        #1234 56

    Born in:US/HI          Here since:'24      Race:Cau
    Occup. :f Exec                 Rel:RC
    Marital Status  :M        Years Smoked     :0
    Gait/Agility    :ok       Smoking Status   :no
    Alcohol Status  :no       Other Substances:no
    Emotional Status:ok       Lives            :f

    Comment:On good diet and exercise program.

    Diach from:Queens         Area:808     Dr:J.Jones     On:3/45
       Dx:Fx rt. fibula  (823- /   )     LOS:16 days
                                          Prev discharge: /

Prev enc on  /  /     Seen by:  (  ) Type:  For:    Prob:
Appr:                                               Disp:
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Portion of computer printout from combined billing and medical record system, developed by Dr Worth of the University of Hawaii School of Public Health.

Computers in the doctor's office. *It was Fred's long-held conviction that much of the information gathered at the point where physician and patient interact is lost, and that leaps of improvement in patient care can stem from retaining and retrieving that information. Computers are necessary to accomplish this. If retrieval is made easy, dozens of questions important to one's own patients can be answered, and it helps to stimulate and excite a practice that might otherwise seem repetitive and humdrum.*

The following paper describes one of many possible approaches to organizing and simplifying daily practice while bursting into the wondrous world of continuous learning that lies beyond case remembrance. A surge of effort is required to develop the template. Once done, the rocket soars into exciting new territory, needing only minor directional adjustments. With Dr Gilbert's constant encouragement and involvement, we have accumulated a computerized data base containing detailed information on patients with thyroid disease. It has become a gold mine, allowing constant improvement in the care of patients. The best time to start this kind of activity was 35 years ago. The second best time is now. And it's fun!

Summary

Using the Computer in the Doctor's Office to Enhance the Quality of Patient Care

Robert A. Nordyke MD, Fred I. Gilbert, Jr, MD

Reprinted from *The Straub Foundation*, Aug 1990; 55:17-21.

"Science is built up with facts as a house with stones. But a collection of facts is no more a science than a heap of stone is a house."

—Jules Henri Poincare, 1908

Information gathered during office visits can be a powerful force for practice evaluation, education, and research. However, unless this information is stored and retrievable, access to it is lost. We describe a simple, inexpensive computer model we have developed over the past 30 years that has enabled us to organize, store, and retrieve data on more than 14,000 patients.

Much of the information collected routinely during office visits has potential value far beyond the management of the immediate medical problems. Most of this information is lost because it is neither gathered nor stored to make retrieval and analysis feasible. Physicians' records reflect their efforts to diagnose and treat individual patients. Neglected is the wealth of data on groups of patients, their trends, their outcomes, and alternative approaches to diagnosis and treatment. Patient records are rarely organized to permit administrative and quality control, clinical research, physician education, and continuous quality improvement in patient care.

To use all the information gathered, records must be retrievable. We describe our experience with a simple and inexpensive way to obtain, store, retrieve, sort, and use clinical data collected by the physician. Our method combines a paper worksheet with a desktop microcomputer and commercial software to retrieve otherwise inaccessible clinical information.

How Can the Computer Help?

Handwriting has the advantage of rapid turnaround time. The typewriter delays turnaround time but its advantage is "fierce legibility" that Henry James noted at the turn of the century. The typewriter's successor, the word processer, retains rapid turnaround and legibility. The computer adds completeness and retrievability. These features open up new possibilities for quality control and clinical research.

Thyroid Clinic Example

Since 1960 we have recorded history, physical examination, laboratory studies, clinical impression, and final diagnosis on a standardized worksheet for more than 14,000 patients referred for suspected thyroid disease. Subgroups of these patients have been followed for up to 30 years. In 1972, these data were computerized. Our model is for a physician's office seeing from five to 50 patients a day. These patients have similar problems that can be described in a relatively brief report. Such conditions are best found in the office of the subspecialist who sees patients for upper respiratory and GU infections, diabetes, arthritis, coronary artery disease, neurologic disorders, neck-back pain, peptic ulcer, pregnancy, and hypertension, and in such areas as periodic health appraisal. The model can be used in almost any practice but it is easier when much of the data is repetitive. It is more difficult when many of the workups are more complex. The model excels in long-term follow-up of chronic diseases which are becoming more frequent in medical care.

Worksheet.—The primary document is a printed worksheet with a follow-up flowsheet the physician takes into the examining room. This doesn't change the normal way of practice or the physician's relationship with the patient. The technique of gathering information and the computer do not intrude. The record may be organized in any way, including the problem-oriented medical record. The special characteristics of this worksheet are shorthand notations, completeness, flexibility, and flow-charting.

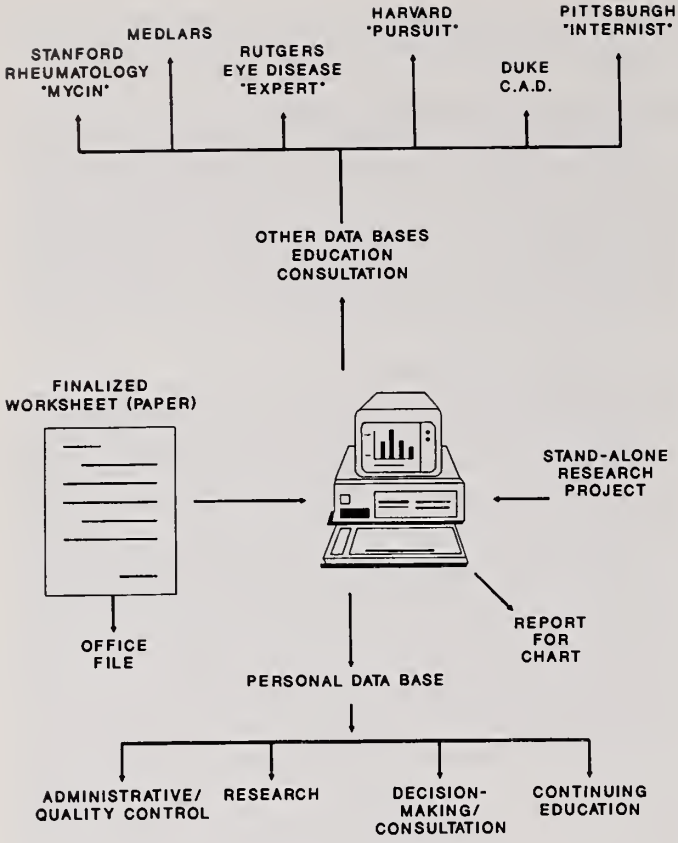
Shorthand notations are faster to use and simplify data entry into the computer. Examples are a line through a number if the item is negative, a circle if it is positive, and a modifier if it is needed.

Completeness is illustrated in the sector on thyroid palpation: if an abnormality is felt, the size, consistency, form, tenderness, and the presence or absence of nodules must be recorded. If there is a nodule, its size, consistency, form, mobility, and tenderness are recorded.

The ability to insert free-language at any point provides flexibility. Free-language is used routinely in the "chief complaint" and "comment" positions, but can be used throughout the sheet.

Flow-charting formats the follow-up records so the information can be checked at a glance-major problems and diagnoses, as well as each item of the patient's progress. A study by Freis measured the time it took to thumb through a standard chart versus a flowchart. The study showed the time was reduced from seven to two minutes for each patient.

The combined effect of these qualities is a reasonably complete data set organized to make storage and retrieval by computer possible.



Hardware.—From 1960 to 1972, information was transcribed to the patient's chart from the worksheets. From 1972 to 1987 we used HP 2000, 3000, and 4400 minicomputers. Recently all data, including free-language and codes, were shifted to an IBM-PC-AT microcomputer with a 60 megabyte hard disk.

Software.—The original programming was in BASIC, which required a trained
programmer to make necessary modifications. This was slow and costly. Later we changed to dbase Ill Plus which greatly simplified the process.

Reports.—Coded and free-language data are entered into the computer by an aide. Data are used to produce a typed copy report for the patient's chart (Fig. 5), ready within a few minutes, and are also stored for administrative control, research, and self-education.

Usefulness of the System

Data base.—The worksheet is fundamental to the success of the system because it provides the input to the data base for later retrieval. Care must be taken in its development. Usually, modifications are necessary before the worksheet is sufficiently complete and comfortable to use. The process of developing the worksheet improves recordkeeping and patient care because it requires decisions about what information is important to gather and retain and what is not.

Retrieval and sorting. This is the heart of the system. After data are entered into the computer they can be retrieved, sorted, and plotted. The physician may wish to do this or may prefer to use another person to extract needed information regularly.

Administrative efficiencies—Much of the immediate gain derives from administrative improvements: dictation is rarely needed, charts are not transported for transcription, patient information is always available, review of past history time is shortened, reports can be complete and typed within minutes, and the record is in the patient's chart promptly. Charges can be attached to each office visit and procedure to determine cost per visit, per year, per patient, or per group of patients with similar diagnoses and similar severity. Potentially, these data can be compared to data of other physicians.

Education and research—Both education and research are sharply expanded by the ability to review one's own data. We have answered a number of questions from our own practice. For example: Can the sensitive TSH (IRMA) be used as a first-line test to detect hyperthyroidism as well as hypothyroidism? What additional information is gained by the FT4? What is the best use of the laboratory for monitoring patients with primary hypothyroidism? What is the optimal dose of ^{131}I for a single-dose cure of hyperthyroidism? Is the cure rate affected by post-treatment use of antithyroid drugs? How do the signs and symptoms of hyperthyroidism change by age decade? What are the clinical characteristics and course of subacute thyroiditis in Hawaii?

Possibly, access to other data bases can be added to the system. However, the gains derived from observation of one's own patients will remain more important for a long time.

Comment

Most physicians believe the quality of their patient care is high, but few have measured it or objectively compared it with that of their peers.

No matter how quality in the doctor's office is defined, its improvement depends on easy access to information about the outcome of their efforts—individual patients, groups of patients, at the first visit, and over time. Records are the storehouse of that information but the records of most doctors are inaccessible. Practicing physicians rarely review records of groups of patients. If such a review is done, it is time-consuming, costly, and usually a one-shot effort that is soon out of date. This leads to nothing more than sporadic bursts of change.

To correct these deficiencies, records must be organized, retrievable, and easily analyzed. These tasks are best accomplished with the help of the computer. Until recently, computers have been used almost exclusively for administrative and financial functions, rarely being applied at the professional level in the physician's office. This is unfortunate, since the doctor-patient interchange is the crux of professional quality. We agree with Houle that the "most fruitful education derives from continually monitoring one's own work, making judgments about success or failure, and altering performance accordingly."

In our model we have attempted to organize records so they lead to a continuing stream of improvements. The system is simple. Cost is reduced by using a worksheet, microcomputer, and commercial software.

Better ways to approach the problem of making information accessible will come later. For now, any physician willing to spend the time and thought on preliminary planning can develop a customized, computerized record system. The effort required to develop the system will be amply rewarded by gains accrued from easy observation of process, cost, and outcome in one's own patients. This will lead to a new and higher level of continuing education and quality of patient care. Also, it's fun.

Acknowledgments
We thank Ann S.M. Harada MPH, Cynthia J. Soraoka MBA, MSW, and Katherine B. Schwenker MBA, BS(MT) for their help on this project over many years.

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Nordyke RA, Gilbert FI Jr, Harada AS: Graves' disease. Influence of age on clinical findings. *Arch Intern Med.* 1988;148;626-31.

Out of the thyroid database *have come many studies, each changing the way we care for patients—diagnosis, treatment, and data-driven decisions. Brief abstracts provide the flavor.*

Summary

Graves' Disease Influence of Age on Clinical Findings

Robert A. Nordyke MD, Fred I. Gilbert, Jr, MD, Ann S. M. Harada MPH

Reprinted from *Arch Intern Med.* 1988;148:626-631.

To determine the influence of age on the signs and symptoms of hyperthyroidism, we prospectively examined 880 patients and matched them by age, sex, race, and visit date with similarly examined euthyroid control subjects. Many signs and symptoms showed little change with age until after the fifth decade of life when they began to decrease gradually. Findings that increased with age were weight loss and atrial fibrillation, while those that decreased most markedly with age were increased appetite and weight gain. The diagnosis is more difficult as age progresses because there are fewer findings and because the significance of those present may not be appreciated. Identification of the most sensitive and specific signs and symptoms in each age decade should Improve the early detection of hyperthyroidism.

Summary

Painful Subacute Thyroiditis in Hawaii

Robert A. Nordyke MD, Fred I. Gilbert, Jr, MD, Chris Lew MD

Reprinted by permission of the *West J Med.* 1991; 7;155:61-63.

Between 1960 and 1982 we prospectively studied 269 patients with painful subacute thyroiditis to determine the demographic characteristics, seasonality, and natural course of the disease. The mean age for all patients was 37.1 years. The female:male ratio was 6.7:1. At the first visit, disease was bilateral in 69%. No epidemic or seasonal pattern was identified. The mean duration of thyroid tenderness was 2.2 months and that of palpable thyroid lumps was 2.8 months. This time difference, sometimes lasting many months, left a pain-free "window" during which the palpable hard residual mass of subacute thyroiditis may be confused with other thyroid problems, especially cancer.

The following bit of clinical research also combines the results from many patients. The questions arose during an after-hours discussion. Why are we routinely doing two tests for the detection of Hashimoto's thyroiditis?...The literature says they are both useful...So?...Nearly every laboratory routinely does two...So?... Has anybody ever considered doing just one?...Don't know.... Hundreds are done each day in Hawaii...Yes....We do them both on our own patients...Yes...Is it possible that one might be enough?...Don't know...Doing both doubles the cost, and every day hundreds of the double-testing are being done in Hawaii...Right...Let's find out if two are necessary...OK. Let's go!

In the next few months we discovered that only one is needed, cutting the cost in half.

Summary

The Superiority of Antimicrosomal Over Antithyroglobulin Antibodies for Detecting Hashimoto's Thyroiditis

Robert A. Nordyke MD; Fred I. Gilbert, Jr, MD; Linda A. Miyamoto MT (ASCP), CNMT; Katherine A. Fleury MT (ASCP), MBA

Reprinted from *Arch Intern Med.* 1993;153:862-865.

Background
Antimicrosomal (anti-M) and antithyroglobulin (anti-Tg) antibodies are commonly measured together to detect Hashimoto's thyroiditis. Since this nearly doubles the cost of testing for one antibody, we wished to determine whether significant diagnostic loss would occur if the two tests were replaced by anti-M alone.

Methods
Both tests were performed in 2030 consecutive patients referred by general internists and endocrinologists.

Results
With a positive result defined as either test being positive at a 1:100 dilution, anti-M was much more sensitive than anti-Tg. Anti-M was positive in 99% (823/831) of all patients with positive tests, while anti-Tg was positive in 36% (302/831). Anti-M was the only positive test in 64% of all patients with positive tests, while anti-Tg was the only positive test in 1%. With a cutoff point of 1:400 dilution, the results were similar.

Conclusions
Anti-M alone appears sufficient to detect autoimmune thyroid disease at about one-half the cost of routinely performing both anti-M and anti-Tg studies. The widespread practice of perform-

ing both tests increases the cost without an offsetting diagnostic gain.

Simplifying the complicated. *Collecting a large amount of data in the computer is just the first step. Analyzing it is another. Over and over, in hundreds of hours of thoughtful discussion with Dr Gilbert, I was constantly reminded of his extraordinary ability to cut through chaff. In one instance we were laboriously trying to summarize the complex information on treatment of hyperthyroid patients with radioiodine that we had entered so carefully into our thyroid data base over 30 years.*

He read what I had written, pushed it aside, and began to talk. Slowly he said (the words are burned in my mind), "The argument over how much radioiodine to use is confused by four widely-held flaws." Sensing that something important was about to be born, I reached for my pencil to take notes. "The first flaw," he went on, "is failure to recognize that most patients with hyperthyroidism eventually become hypothyroid regardless of the dose selected. The second is the unjustified confidence that gland size and tracer uptake are the key determinants in arriving at the proper dose. The third is overestimation of the long-term radiation risk at the dose levels we use." Long pause, gazing out the window. "But probably the most important flaw is that most physicians set the initial treatment of hyperthyroidism to achieve the goal of normal thyroid function rather than to cure hyperthyroidism. This often prolongs hyperthyroidism and doesn't prevent the ultimate development of hypothyroidism."

Suddenly the clarifying light flashed. That's it! The paper was redesigned and published shortly thereafter. A statement of the "flaws" unified it all.

Optimal Iodine-131 Dose for Eliminating Hyperthyroidism in Graves' Disease*

Robert A. Nordyke MD, Fred I. Gilbert, Jr, MD

Reprinted from *J Nucl Med.* 1991;32:411-416.
Summary and Introduction only.

Since hypothyroidism is commonplace after treatment of Graves' disease with radioiodine, the goal should be cure of hyperthyroidism rather than avoidance of hypothyroidism. To find the optimal dose to accomplish cure, we treated 605 patients with stepwise increasing doses of 3, 4, 5, 6, 8, and 10 mCi, analyzing the relationship of dose, age, sex, gland weight, and thyroidal uptake to cure. Estimates of cure at doses above 10 mCi were made from the literature. Cure was directly related to dose between 5 and 10 mCi. There was no significant relationship between cure and age (chi-square, $p = 0.74$), sex (chi-square, $p = 0.12$), and 24 hour uptake if over 30% (chi-square for slope, $p > 0.10$). Cure and gland weight had an inverse relationship (chi-square for slope, $0.01 < p < 0.02$). We concluded that the optimal ^{131}I dose for curing hyperthyroidism is approximated by starting with 10 mCi and increasing it for unusually large glands or for special patient circumstances.

Since 1941 when the first patient was treated with iodine-131 (^{131}I), there has been widespread acceptance of radioiodine as a treatment for hyperthyroidism, but there has been no general agreement on the dose. The earliest and most widely used methods for dose calculation have been formulas involving estimated gland size, thyroidal uptake, and tracer retention in the gland aimed at bringing each patient to a normal metabolic state.

This approach, which continues to influence the treatment of hyperthyroidism with radioiodine, has several major flaws: failure to recognize that most patients with hyperthyroidism eventually become hypothyroid regardless of the dose selected, thus making the goal of achieving a permanent state of normal thyroid function unrealistic; unjustified confidence that gland size, tracer uptake, and retention in the gland are the key determinants in arriving at a proper dose; overestimation of the long-term radiation risk at the dose levels used; and setting the goal of therapy as normal thyroid function rather than curing hyperthyroidism.

Recognizing these flaws, some investigators have suggested that patients are best treated by a single thyroablative dose,

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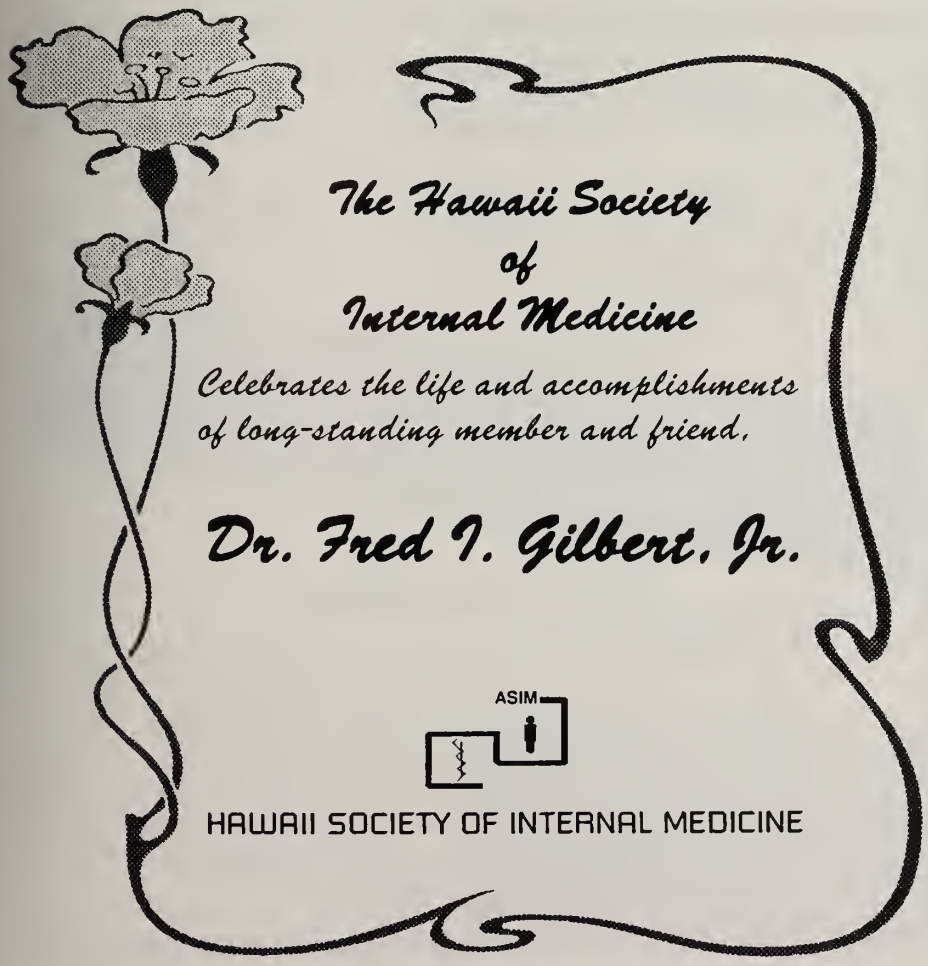
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arguing that the aim is elimination of hyperthyroidism, that larger doses accomplish it with more certainty, and that the inevitable hypothyroidism develops under physician control. This approach raises a new question: In the tradeoff between curing hyperthyroidism and the radiation risk, how much ^{131}I is enough? To answer this, we examined the proportion cured (proportion of hyperthyroidism eliminated) for 605 patients with Graves' disease treated at progressively increasing fixed doses of ^{131}I.

Large prospective studies. *Expensive long-term, randomized, double-blind, crossover studies are essential to settle some important questions, and Dr Gilbert's teams have been involved in a number of federally funded ones. The Coronary Drug Project eliminated Atromid-S and D-thyroxine as cholesterol-lowering agents because they did more harm than good; the Systolic Hypertension in the Elderly Project determined that treatment of persons with this condition improved life expectancy. This broader approach to clinical research is exemplified by the Breast Cancer Detection Demonstration Project (BCDDP). To execute the 10-year venture successfully required innovative uses of highly trained non-physician personnel, constant quality monitoring, a high level of team coordination, and a lookout for improved technology and new ideas. Among the national centers, Dr Gilbert's was the first to insist on using rare-earth radiologic screens which reduced radiation by 90%; this gradually spread throughout the U.S. At the end of the project he gave mammographic instruments to three hospitals that agreed to carry out low-cost screening for women of Hawaii.*



What Have We Learned from the Breast Cancer Detection Demonstration Project?

Fred I. Gilbert, Jr, MD, Gloria Low MPH

Reprinted from the *Hawaii Med J.* 1986;45:279-292.

Between 1974 and 1979, 10,000 women with no symptoms or suspicion of breast cancer entered a screening project to detect the presence of breast cancer in asymptomatic women. Of the 10,000 women, 181 breast cancers were discovered in 171 women during the five-year screening period. An additional 82 women developed 89 breast cancers during the five-year follow-up period.

Although preliminary analysis of this data has been published both nationally and locally,[2-3] this article summarizes what we have learned from this project over the past decade and some of the unresolved issues. A similar report has been distributed via a final newsletter to the 10,000 women who participated.

The Breast Cancer Detection Demonstration Projects (BCDDP) raised the level of capability of early detection of breast cancer in Hawaii and the nation. It was started here in Hawaii early in 1974.

Accomplishments

For years we knew that some women were lucky enough to have had a minute breast cancer discovered and treated because it happened to be next to or in a biopsied lump. In the early 1970s, the Breast Cancer Detection Demonstration Projects brought to communities across the country the means to detect systematically these tiny, often microscopic, cancers through the use of the relatively new technique of breast x-ray imaging called mammography. Initially, personal physicians, surgeons, radiologists, and pathologists had difficulty in making decisions about suspected cancers that neither could be seen nor felt. However, increased use of mammographic units and technical improvements were paralleled by increased professional skills in both the diagnosis and management of breast cancer. Diagnosing smaller localized cancers resulted in more conservative forms of treatment that offered an alternative to radical mastectomy. This new knowledge was made available to women, enabling them to participate more actively in decisions regarding treatment.

In 1975, the Kodak Company developed the rare-earth screen that converts x-ray energy into light energy. The author (Gilbert) applied this to mammography in Hawaii's BCDDP the same year. This new technique resulted

in an enormous reduction in radiation exposure without losing definition. These screens not only reduced mammographic radiation to 10% of what had been a previous low level, but also led to similar reductions in radiation levels in other procedures, such as x-rays of the chest.

While physicians improved their skills, nurses and x-ray technologists were trained and learned how to palpate the breast for possible tumors. This new skill was honed to a very high degree because these people received precise instruction on breast examination and then performed 20 or more examinations daily, month after month.

Utilizing these improved capabilities during the five years of screening, the BCDDP detected 181 breast cancers in women who were unaware that they had it. Although almost 45% of these cancers could be felt with the fingertips, an additional 42% were so small that they could be detected only by mammography. In any screening program, the first screening yields the largest number of cancers: 55 women of the 10,000 in the Hawaii project were found to have breast cancer during the first screening round (which took two years) and 41 during the second round. An average of 30 women were diagnosed annually thereafter, bringing the total to 181.

There is no question that mammography is a screening technique that can save lives. In these women, diagnosed with very early breast cancer, the five-year survival rate is 96%. This is very much better than the five-year survival rate of 71% in women with larger cancers and cancers that have spread to the lymph nodes.

False Negatives and False Positives

Screening techniques still are not perfect. Even with the best available skills and technology, and screening as frequently as every year, 13% of these 181 cancers were undetectable at screening but became evident within a year. At the same time, a high percentage of breast biopsies or aspirations, done as a consequence of the screening, turned out to be negative for cancer. Therefore, some women who ultimately are proven to be free of breast cancer may, because of suspicious findings on palpation or mammography, undergo emotional stress and the expense of biopsy, only to discover that the abnormal finding is not a cancer. On the other hand, a normal mammogram or a negative aspiration or biopsy may greatly allay fears about the presence of breast cancer.

Screening Intervals

The question of what is the appropriate interval between mammographic examinations still needs further evaluation. Recent studies in the Netherlands have shown an improved five-year survival rate, when screening mammograms were done 18 to 24 months apart. Of course, more cases could be diagnosed at an earlier stage if screening were done as often as every 12 months, but, so far, a 12-month interval between examinations has not been accepted by the majority of physicians or by women. Ten out of 11 women feel that x-ray examinations are probably too hazardous and too expensive to be worth the potential benefit. How often to have screening mammograms will depend on individual circumstances and the willingness of both individuals and society to pay for such examinations.

The true cost of a set of screening mammograms, under optimal conditions, is close to $50. However, the chances of finding a cancer in women at random risk are only about two out of 1,000. It ends up costing society approximately $25,000 per discovered breast cancer in women who have no signs or symptoms! This figure includes, in addition to screening mammograms, costs such as biopsies for false positives, extra office visits, and so forth, which amount to an average of about 10 times the initial mass screening cost. Obviously, we still need better ways to identify women at increased risk, and we need better and less expensive ways of detecting breast cancer, especially early and potentially curable breast cancer. Most of all, we need to know how to *prevent* breast cancer, which is only a faint hope at present.

What Can a Woman Do?

Until we can answer precisely the question of prevention, women can, for now, reduce the risk of breast cancer by following a general guideline for good health. Substances that are known to have detrimental effects on general health should be avoided. For example, it is known that fat women and women



who eat a high-fat diet are more apt to develop breast cancer. This suggests that a balanced diet without excessive calories, particularly as fats and oils, may not only benefit total well-being but also result in lowering the risk for breast cancer. Regular exercise and recreation contribute to weight control by burning up calories and providing a means of managing stress. Ineffectual management of stress does lead to overeating.

Affordability of Screening Mammography

The cost of mass screening for breast cancer is, in our opinion, still too high. As stated above, the actual cost of taking and interpreting a set of screening mammograms under nearly optimal conditions is about $50. By contrast, the cost of diagnostic mammography (when there is a suspicion of cancer) is about twice as much as screening mammography, but is often covered in part by insurance plans. The answer to high cost is neither government subsidy nor insurance coverage. Either course would merely shift costs, rather than reduce them.

Several factors influence the cost and hence the affordability of screening examinations for breast cancer. First and foremost, the cost of the test itself: Not only is the mammography equipment expensive ($70,000 or so), but so are the necessary services of highly trained personnel. Additionally, there are the expenses involved in following up suspicious findings, which often prove to be benign. Second, the frequency of screening: Annual screening can be more than a lot of women can afford. Finally, the site: The track record suggests that low-cost screening services are more likely to be available in a nonhospital setting or a facility that is specially set up for such services, utilizing volunteer help and other community support mechanisms, rather than a hospital or a private radiological laboratory.

Another factor to be considered is that the lack of any effective method of identifying women at high risk means that all women must be considered as at risk. Although there is a relatively high probability of a woman developing breast cancer during her lifetime (one in 11), there is a relatively low probability of her developing it in any one year (one in 400). Therefore, the ideal screening test for a disease such as this one would have to be very inexpensive so that it can be utilized repeatedly by all women over age 40. Unfortunately, such a test is not yet available. However, using the tests we do have, the BCDDP has demonstrated several cost-effective techniques of screening that reduce costs and increase quality at the same time.

The BCDDP has shown that trained, non-physician examiners can perform screening breast examinations very well. Specially trained technologists can distinguish normal mammograms from abnormal ones, thus permitting the radiologist to focus his attention on the abnormal ones. Women appreciate the opportunity that is also provided, to learn breast self-examination on their own bodies. Palpation and mammographic examinations of good quality require proper training, proper maintenance of the mammographic unit and monitoring of radiation, proper positioning of the screenee and processing of film, interpretation of films, and followup of suspicious findings. Moreover, the quality of the procedure depends heavily on the number of exams performed daily. Thus, a facility that keeps its acumen finely honed by a large volume of cases would be the place to have a screening done.

Although research will proceed on the question of optimal frequency and other issues, we feel that screening mammography should be offered to the public, while efforts to lower cost and improve efficiency continue.

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Sleeping Problem?

Daytime sleepiness and other sleep related problems are common and often go unrecognized. Untreated they impair the quality of life, may predispose to work related and traffic accidents and lead to serious medical complications. Loud snoring associated with breathing difficulties, frequent leg movements, poor quality of sleep, morning headache and dry mouth and need to frequently nap are just a few of the symptoms. Many sleep disorders can be diagnosed and effectively treated.

Thomas McNorton M.D.

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Health Services Research

Task reassignment is an aspect of health services research. It seemed evident to Fred Gilbert that the tasks done by health care team members were often inappropriate. Physicians carry out simple, repetitive tasks that might be done as well or better by others who are well trained and supervised, leaving physicians to perform tasks more in keeping with their unique abilities. In 1969 he wrote: "The physician in the near future must function as a technician and accept this role, or he must function as a true professional creating new health workers where needed and organizing about him the new people and technologies to improve the health of his or her patients. If there is thoughtful consideration of the patient as well as the disease, patients will accept these new interfaces and all participants, including the physician, will be the better for it."

The following papers sample these ideas.

Screening of Chest Roentgenograms by a Radiological Assistant*

Robert G. Rigler MD, Fred I. Gilbert, Jr, MD

Reprinted from *Group Practice*. March 1971; 20

Medical-legal roadblocks would first have to be lowered. But the extended use of paramedical personnel in the field of radiology could reduce the cost of medical care without compromising quality.

The demands being made on diagnostic radiology are increasing. Soon there will not be enough radiologists to meet the needs. This was the essence of the National Advisory Committee on Radiation's report to the Surgeon General in 1966.

With this in mind, the Straub Medical Research Institute decided to undertake a pilot program to train lay persons to screen survey chest roentgenograms in the Health Appraisal Center. If the program was a success, we might be able to ease the burden of our radiologists.

The Cost Factor

There were also obvious implications regarding the cost of medical care. Physicians in our health appraisal center use the results of a series of diagnostic tests to determine the overall status of an individual's health. In our radiological program, we use 100 mm photofluorograms of the chest, and cost is an important consideration.

The lower cost of the minifilms and their lower storage and development costs outweigh the cost of the additional radiation that must be administered. We have found that the 100 mm films are as efficient as 14 by 17 films for survey and teaching purposes. However, we could achieve the greatest economy if we could utilize a lay reader instead of a physician to interpret the films.

Training

The individual who participated in this investigation had worked for three years as a secretary to a group of orthopedic surgeons and her mother was a registered nurse. She had no prior experience in medicine or radiology other than this peripheral exposure. At Straub Clinic, she first underwent a three-month probationary training period as a diagnostic technician. Her work involved performing tests such as height, weight, pulmonary function, vision, hearing, blood pressure, photomotograms, EKG, and taking chest photofluorograms.

It was not until this three-month period was completed that her interest in interpreting chest films was aroused, and she was chiefly motivated to undertake the pilot program through her own interest. However, her knowledge of radiographic technique was limited to taking photofluorograms.

Each day, for the next three months, she watched our radiologists and learned the basic concepts of chest film interpretation. She did not attempt to read the films herself. She simply listened and looked while the radiologist explained any abnormalities that he discovered in the course of daily interpretations.

At the same time, she spent many hours at home studying the details of normal and pathological anatomy of the chest from textbooks. She learned to distinguish some of the normal and abnormal physiological changes of chests studied in relation ship to roentgenograms, the changes due to chronic and acute disease, and to recognize abnormality and decide whether or not it was significant.

Study Methodology

At the end of the six-month period, we began a double-blind study to measure her newly found knowledge. Our assistant privately reviewed each film, recorded her interpretation and then sorted the films into negative and positive groups. Borderline findings were included in the positive group.

Then a radiologist conducted independent examinations and recorded his interpretations. The results were compared and discrepancies reviewed. The films could fall into five categories, which we used. This classification, incidentally, readily lends itself to computer analysis.

Results

With time and experience, the significant discrepancies made by the screening assistant began to diminish. The radiologist and screening assistant read 2,432 films over an intermittent period of 115 days. In that time, there were 57 significant discrepancies in their interpretations, a rate of 2.6%. There were 18 significant discrepancies, or 3.6%, for the first 500 x-rays that the assistant screened and 12 significant discrepancies, 2.4%, for the final 500.

The results of the study were heartening. They indicate that a well-motivated, bright person can be trained to recognize abnormalities in chest roentgenograms and to grade the significance of the findings.

From reading Garland's article on "The Reliability of Roent

gen Survey Procedures,"[1] it can be seen that the consistency and performance of the trainee compared favorably with that of seasoned radiologists. The best of radiologists will have a significant rate of self-inconsistency with his or her own readings and rereadings of an identical large series of films.

There is also an attitude factor to be taken into account. The mood of the reader will have an effect on the number of positives and negatives that are called. For example, an individual in an optimistic frame of mind will tend to call fewer positives, and vice versa. Fatigue, distraction, boredom, and the wandering mind become factors also inherent in any mass screening situation.

When the double-blind portion of the study was completed, the assistant began to give the radiologist two distinct stacks of films. We found that she saved him one-half to two-thirds of the time that it had taken him to interpret and record the findings of the films before the program was instituted. For example, if it had taken him 30 minutes to view some 50 films, it now took him less than 15 minutes to complete this same number.

The attraction of this system is apparent. It eliminates the radiologist's tedious chores of recording and classifying and allows him to concentrate on those films which he knows show abnormalities and are, therefore, of particular interest.

Overview

The entire study and training program took 18 months and far exceeded that which would be normally expected under an intensive training program. One reason for this was that the investigation was essentially being conducted only for interest's sake during the initial stages.

Then, she was instructed by three radiologists during the 18 months. This is not fully desirable because each doctor has a different approach to interpretation. Consequently, the time taken to absorb the different methods was longer than if just one radiologist had been the instructor throughout.

In addition, she felt that she should receive training in anatomy and pathology. Although she might be able to observe an abnormality in the film, she would be unable to give an accurate anatomical description. She had never formally studied these areas.

Classification

	Grade	Interpretation	Radiographic Follow-up Recommendations
Negative	1	No abnormality	None
	2	Abnormality of doubtful significance	None
	3	Significant abnormality (but no additional information likely to be gained by more films)	None
Positive	4	Possible significant abnormality in need of confirmation	PA 14 x 17
	5	Definite significant abnormality, more films needed	PA and lateral 14 x 17



Gretchen Ludwig, radiological assistant, learns to interpret the minifilms with Dr Rigler's help.

An intensive training program should take approximately three months, depending on the previous knowledge of the applicants. For example, the training period for a candidate who received some medical training in the armed services would be shorter than that for a high school graduate. Utilizing radiologic technologists for film interpretation has recognized merit.[2]

However, the demands placed on a radiologist's time for teaching must also be weighed. When the pluses and minuses of such a program are tallied, this factor must be subtracted from future benefits. Several assistants should be taught simultaneously. Training on a one-to-one basis may not be worthwhile.

Legal Responsibility

Until problems of legal responsibility can be clarified, physicians will be hesitant to allow any lay person, however competent, to render final diagnostic judgment in a separation of negative from positive chest roentgenograms. The American Society of Clinical Pathologists has made great forward strides in lessening the skilled manpower shortage by instituting the Certified Laboratory Assistants (CLA) and Cytotechnologists (CT) (ASCP) Programs years ago.

Perhaps it is time for organized radiology to follow suit and develop standardized courses, requirements and a proficiency examination for a Certified Radiological Assistant Program. The economic implications are obvious. The extended use of paramedical personnel in the field of radiology could reduce the cost of medical care without compromising quality.

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* Supported in part by NIH grant number 99021-03-70

Allied Health Personnel in Cancer Detection

Utilization of Proctosigmoidoscopic Technicians in Detecting Abnormalities of the Lower Bowel

Fred I. Gilbert, Jr, MD, James W. Cherry MD, Donald E. Downing, and Richard J. Anema

Reprinted from *Cancer* (Suppl). 1974;33:1725-1727.

The use of allied health personnel in early cancer detection was precipitated by an involvement in automated multiphasic health testing at the Straub Clinic in Honolulu, Hawaii. The Health Appraisal Center itself evolved out of the conviction that it was absolutely impossible for physicians on a one-to-one basis to screen large numbers of apparently well individuals for significant disease. Internists, in particular, were most outspoken about the misuse of their time in repetitive, low-yield diagnostic maneuvers. They felt that properly trained technicians and nurses could do much of what they were doing. Accordingly, high-school graduates with little or no medical background were trained to do basic procedures such as vision and hearing tests, venipunctures, and simple laboratory tests such as hemoglobin and urinalysis. They were also trained to take and screen-read electrocardiograms and chest roentgenograms.[1] The registered nurses were trained to perform screening, physical examinations for the presence or absence of abnormalities.[2] This included a Pap smear for carcinoma of the cervix, and palpation of the breast. The nurses also gave the patients instructions on breast self-examination.

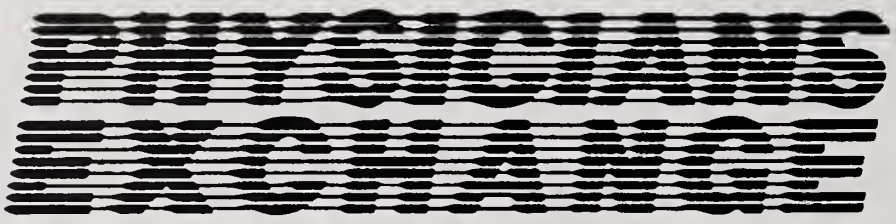
Patients over 39 years of age were routinely referred from the HAC for proctoscopies. The gastrointestinal surgeon who performed the majority of the proctoscopies soon found that a great deal of his time was being spent in routine proctoscopies with resultant decrease in time available for major abdominal surgery. Also, the economics of having a highly trained surgeon perform routine proctoscopies on asymptomatic patients did not work out to the advantage of either patient or physician. The charge for the proctoscopic examination was almost the same as for an entire examination in the HAC. It was decided that a person with some medical background could be trained to do routine proctoscopies. A former Army corpsman commenced training for this position in March 1969.

Training the Proctosigmoidoscopic Technician

It was anticipated that a training period of approximately 6 months would be necessary. However, since the trainee had previously worked in a medical environment, he readily adapted to the clinical setting. Within 3 months, he had acquired a technical competence in proctoscopic examination that was comparable to that of his physician preceptor. His training included formal discussions with the physician, study of pertinent literature, observation of proctoscopies and, finally, actual performance of proctoscopies under direct supervision of the physician.

The technician's responsibilities included administration of enemas to male patients, explanation of proctoscopic procedures to all patients, performance of proctologic examinations on asymptomatic or minimally symptomatic patients, and scheduling patients for necessary laboratory and roentgenographic studies. He also took the initial history pertinent to the ano-rectal problem. On symptomatic patients, the physician performed the proctoscopic examination, and the proctoscopic technician observed the procedure and the pathology, if found.

After performing 2515 proctoscopic examinations over a period of 18 months, the technician participated in training his replacement, another corpsman, who underwent a similar training. The latter conducted more than 4000 proctoscopic examinations in the 28 months he has been with the clinic. Boredom became a real problem for the technician after he performed some 2000 proctoscopies. Assisting the supervising physician in the operating room with further responsibilities in care of patients now relieves



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June M. Morioka, RN, Manager

Table 1.—Pathology Found in 1972, Ano-Rectal Clinic, Straub Clinic and Hospital, Inc.

Pathology	Technician	Physician
Hemorrhoids	378	202
Fissure and anal ulcer	59	82
Carcinoma	3	13
Mucosal excressence	61	20
Proctitis	12	21
Hypertrophic and papillae	81	20
Carcinoid	1	3
Villous adenoma	5	2
Polyps	75	59
Ulcerative colitis	0	15
Unspecified	3	13
Pruritis ani	13	2
Baron ligation of hemorrhoids	25	55
Melanosis coli	3	2
Diverticula	6	2
Followup carcinoma	2	35
Total symptomatic	727	546
Total asymptomatic	1074	553
Total proctoscopies	1801	1099

Table 2.—Patient satisfaction with Proctosigmoidoscopies and Associated Care by Proctoscopy Technician

Degree of satisfaction	Number of patients
Very satisfied	39
Moderately satisfied	7
Not satisfied	0
Total patients interviewed	46

Of the 46 patients interviewed, 7 had previous proctosigmoidoscopies by a physician. These patients were asked to compare the care received by the technician with that of the physician. The results are as follows:

Comparison of technician-administered proctosigmoidoscopy with physician-administered proctosigmoidoscopy	Number of patients
Better than physician	3
Same as physician	3
Not as good as physician	1

this boredom and reduces the possibility of lapse in quality of the examinations.

Results of the Proctosigmoidoscopic Examinations

Table 1 illustrates pathology found by the physicians and technicians in 1972. Although there were 3 carcinomas found by the technician, compared with 13 found by the physician, it is to be remembered that symptomatic patients were referred to the physician, and asymptomatic patients to the technician. Similarly, no cases of ulcerative colitis were found by the technician, whereas the 15 cases found by the physician were originally referred to him as symptomatic patients, and most had the diagnosis of ulcerative colitis at the time of referral. Both physician and technician attempt to introduce the proctosigmoidoscope 25 cm without producing undue discomfort to the patient. Both reach this depth in slightly over one-half of the patients examined.

Cost

The cost of the proctoscopic examination to the institution per visit is approximately $8.70 for the procto-technician, not including physician supervision, as compared to $14.70 for a proctoscopy performed by the physician.

Acceptance

Probably the best guide to patient acceptance is the willingness of patients to return in subsequent years for a proctoscopy by the technician. We have had several informal guides as to patient acceptance, the first from the supervising physician who notes that the proctoscopic technician in general takes more time with the proctoscopic examination, and includes what might be termed *vocal* anesthesia in discussing the procedure with the patient prior to and during the examination. The supervising surgeon has noted a very high level of patient acceptance in having the procedure done by the proctoscopic technician. On scheduling the patients for a subsequent proctoscopic examination, the referring physicians have observed no reluctance to having the procedure done by the technician. To put this in more objective terms, registered nurses who were trained interviewers not associated with Straub Clinic interviewed a sample of the patients. Of 46 patients interviewed after the procedure, none was dissatisfied with the proctoscopy being performed by the technician (Table 2).

Summary

Proctoscopic examinations on the apparently well or minimally symptomatic individual can be safely conducted by individuals with corpsman background, who can be trained to levels of competence within 2 to 3 months. No complications were noted in 6500 proctoscopies performed by technicians over a 4-year period. This has produced a savings to the patient and institution, with a patient acceptance equal to that of having the procedure performed by a physician. As expressed by Dr Joseph Strode, one of the most respected senior surgeons in Hawaii, "Any clinic faced with the problem of routine proctoscopic examinations in a significant number of individuals would do well to enlist the services of a properly trained technician."[3]

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The Health Appraisal Center *(HAC) was another example of health services research, emphasizing task reassignment, innovative use of technology, and computer-controlled information-gathering rolled into one system. It is described in a series of reports on automated multiphasic health testing at Straub. As developed by Dr Gilbert's group in the mid-1960s with the aid of a $150,000 NIH grant, the central idea was to improve the quality and efficiency while reducing the cost of periodic examinations of patients who were "apparently well" or had stable chronic diseases. They needed complete health reviews or updates, but their numbers were overwhelming clinicians.*

HAC's elements were a computer-patient interactive branching history; physical measurements and blood drawing by aides in the unique "Hawaiian carrel"; ECGs by technicians who screen-read them; physical examinations including Pap tests, rectal examinations, and sigmoidoscopies by nurse practitioners; and review by physicians after data-gathering. At each juncture printouts of positive findings were spewed out from the imposing PDP-40 computer housed in a 12-cubic-foot air-conditioned room that did the same work as a little laptop does now. The time was one hour, the cost $30.

The HAC functioned steadily at 25 to 35 patients daily for 11 years, but its value was not widely appreciated, partly because of a fee-for-service environment. It was complete, complementary, and timesaving to physicians who used it but directly competitive to those who didn't. Its rebirth as an integral part of ongoing patient care will most likely occur when managed care expands.

Health Exam Plans

Tomi Kaizawa Knaefler

Reprinted from the *Honolulu Star Bulletin*, August 16, 1967

The Straub Clinic's revolutionary physical examination plan that will go into effect later next month was unveiled today, oddly enough, in Stockholm, Sweden.

The plan was presented before the Seventh International Conference on Medical and Biological Engineering by Dr Fred I. Gilbert, Jr, who co-authored the blueprint with Dr R.A. Nordyke.

The new plan, designed for the *apparently well individual*, is tailored to provide comprehensive examinations in a minimum of time, with a maximum of efficiency.

The cost, however, is expected to remain pretty much the same as under the existing system.

Eventually, Straub Clinic physicians believe the new plan will bring physical examination fees down, or additional tests will be added, enabling patients to get more for their money.

An average pre-employment physical today costs about $15. The price for periodic physicals varies greatly—from a $15 more-or-less quickie to a $75 to $100 executive royale.

Initially, the plan will be geared to meet the needs of persons needing pre-employment or periodic physicals. Later, the program may be expanded to provide diagnostic procedures for the sick.

Under the plan, an apparently well individual will start by answering (multiple choice or yes-no) questions pertaining to general medical history on an automated reader.

Then, the patient will sit in a cubicle and undergo tests, including vision, hearing, respiratory function, thyroid, EKGs, blood pressure, chest x-rays, blood and urinalysis, conducted by diagnostic technicians. All that will be done within the cubicle area.

From there, the patient will walk a short way to an examining room, where a registered nurse specializing in diagnostic medicine will conduct an initial physical evaluation and summarize the test findings.

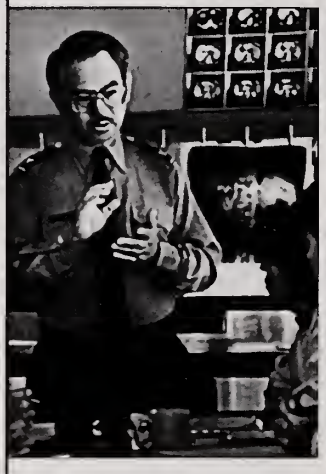
It is only at this point that the doctor will enter the examination and perform selective tests based on the findings and make recommendations.

Drs Nordyke and Gilbert point out that the plan will relieve physicians from doing many routine measures that they now perform and, theoretically, they'll be able to spend more time studying patients and talking over problems with them.

To accommodate the plan, the Straub Clinic is now renovating the entire second floor of the Palma Building, where the test procedures will be concentrated.

The new setup will enable a patient to be comprehensively examined in about an hour. Under the existing non-concentrated

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system, a patient has to spend well over a half-day for a thorough physical.

The doctors expect to examine about 50 patients a day by the end of the first year and double that number eventually.

In addition to increased efficiency and maximal utilization of staff, the Straub doctors point out that computers would be used for data processing.

This will enable doctors to retrieve individual information quickly and accurately and to compile various summary data for research purposes.

Drs Gilbert and Nordyke worked out of Straub Medical Research Institute for the project, which, they believe, will relieve today's paradoxical problem "of considerable magnitude" the hordes of apparently well individuals needing examinations.

They state that physicians now are bogged down with routine procedures and "frustratingly engaged in high-cost, low-yield diagnostic maneuvers."

The Straub doctors rejected the fully automated multi-test procedures now being tried in several areas because of high per patient cost factors and the absence of the non-programmed human element so essential in medicine.

Multiphasic Screening Cut Down to Size

Fred I. Gilbert, Jr, MD

Reprinted from *Medical World News*. 1968;60-61



Dr Fred I. Gilbert, Jr, and nurse Pat Summers using his multiphasic health screening equipment.

A group practice in Hawaii has demonstrated that it doesn't take a lot of elaborate apparatus and huge outlays of money to set up a semiautomated unit for screening apparently well patients. Such a facility, the group's director contends, is within the reach of many physicians.

"Doctors tend to view multiphasic health screening only in terms of expensive equipment requiring large numbers of highly trained personnel," says Dr Fred I. Gilbert, Jr, director of the Straub Medical Research Institute in Honolulu. Such physicians usually think of the assembly-line type of operation used at big diagnostic clinics, where a patient goes through some 20 stations for a head-to-toe examination. "But there is another way."

At the Straub Clinic—a group-practice, fee-for-service clinic of 60 doctors that handles about 1,000 patients a day—the machines are, in effect, brought to the patients rather than the other way around. The six-foot-square room known as a carrel after the library term meaning a place for individual study—contains a photomotograph for evaluating thyroid function, a Vitalor machine for measuring respiratory function, an ECG, an audiometer, a sphgmomanometer, calipers for measuring fat, and a sight scanner. The cost of setting up one such carrel, which can handle 25 patients a day: $5,000.

Group practices involving even as few as four internists would find the system particularly useful, Dr Gilbert believes. Larger groups can simply increase the number of carrels used. In the Hawaii clinic they have four of the screening units. And if a group's doctors should decide to invest in a very expensive machine, they can have it serve several carrels by means of connecting cables.

The carrels at the Straub Clinic have proven to be economical in several ways, says Dr Gilbert. First is the saving in employees. Instead of marching the patient to a dozen or more people who each manipulate some testing device, a single diagnostic technician performs all the tests conducted in the carrel. One person can handle almost everything, Dr Gilbert notes, because the machines are relatively simple to operate and have built-in quality controls.

Second, the clinic physicians did not choose the most sophisticated hardware possible but only the machine that would suffice to do the job they want. "And if people can do the job better, faster, and for less money than machines, we use people," says the Honolulu internist. "For example, we find that interpretations of ECGs can be done more accurately by a diagnostic technician and electrocardiographer than by any existing machine."

Third, the multiphasic unit cuts costs by not tying the equipment directly into a computer for immediate recording. Instead, the screening unit feeds the test data twice a day into a computer used by the entire clinic.

Before a patient sees the diagnostic technician in the carrel at Straub Clinic, he fills out a medical history questionnaire and has his chest x-rayed. Later, an RN specially trained in diagnostic medicine examines the patient for gross physical abnormalities and such diseases as glaucoma. An internist then checks the findings of the nurse and the diagnostic technician and does any physical examinations he feels are warranted. At this point, he may call in another specialist. Meanwhile, a laboratory technician carries out biochemical tests on blood and urine samples in a minilab that is equipped with an AutoAnalyzer.

The entire procedure, from history questionnaire to examination by a specialist if indicated, takes about one hour for a person in his thirties. If he is over 40, it takes another half-hour because additional tests are done. The price to the patient varies from $15 to $50, depending on the extent of the examination.

The health-appraisal unit in the clinic is open to all 60 doctors in the group and to any other physician in the Honolulu area who wishes to refer his patients for the screening procedure. "Physician acceptance has been excellent," says Dr Gilbert. To help the referring doctor make the best use of the screening program, the clinic sends him a tentative diagnosis based on the test results

and also suggests any other diagnostic tests that seem to be indicated.

Dr Gilbert would like to see similar carrel units set up throughout Honolulu and elsewhere, so that all physicians can have testing facilities near their offices. He says the carrels in his clinic are "suitable for both large and small populations and can be fixed or mobile. I believe they set the direction that most multiphasic screening units will take in the next few years."

The Hawaii Carrel—A Modular Approach to Multiphasic Screening

Fred I. Gilbert, Jr, MD

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This presentation is a review of the developments of multiphasic screening for chronic disease as conducted in the multispecialty group practice that I am associated with in Honolulu, Hawaii. My personal interest in this field began in 1951, shortly after I joined the Straub Clinic. I found that along with a number of my colleagues, especially in the fields of general practice, internal medicine, and pediatrics, I was spending approximately 25% of my time caring for the well rather than the sick. Also, I observed that most of us approached the examination of the apparently well in much the same manner that we dealt with the obviously sick. We did what we were taught to do in medical school. We would record the chief complaint, family history, past and present illnesses and perform a physical examination and then order certain laboratory procedures. Diagnoses were arrived at after the results of the laboratory tests were known and then certain recommendations were made. We physicians who were actually doing these examinations frequently found ourselves functioning more like clerks and machines than as physicians. Repetitively going through various diagnostic maneuvers and sorting through piles of normal laboratory reports does not sharpen diagnostic abilities. In short, the periodic health appraisal examination, as was conducted during that era, wasted considerable time of both the physician and the patient. In 1951, we introduced the Cornell Medical Inventory[1] to Honolulu. This saved some of the physician's and patient's time by permitting, prior to the examination, a systematic review of past medical history and recent symptoms. The patient still had to go from place to place to get his or her various x-ray, laboratory tests and other procedures done and the physician still had to conduct his or her physical examination in the traditional manner and collate all of the increasing mass of medical information generated at the time of the health appraisal.

By 1953, we felt that we had given sufficient thought to the matter to permit us to try a different approach. We selected the Hawaii State Fair as a test site for our hypothesis and set up a

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booth to give free tests to anyone who requested them. We included such procedures as chest x-ray, EKG, hemoglobin, white blood count, vision and even blood typing. Although this was an operational success, it had one major defect: It was directly linked to primary patient care. It presented the physician with the results of a number of unsolicited tests, which, in some cases, indicated the possible presence of a condition which had in fact been under treatment for several years. This experience led to the conclusion that if multiphasic testing were to be of real value, it had to be done close to the mainstream of medical care and should be conducted close to the physician or group of physicians responsible for the comprehensive care of the individual. The physician responsible for the patient's care should have much to say about who is to undergo multiphasic screening, what tests are to be done, and how often the tests are to be performed.

Throughout the 50s and 60s, we also watched with interest the progress of Dr Morris Collen[2-3] who was refining multiphasic screening techniques at the Kaiser Hospital in Oakland, California. He introduced two very important factors during this period: Automation of multiphasic testing equipment and improved quality of the examination.

In 1966, with the assistance of a National Institute of Health grant,[4] we were able to further define our concepts of what we thought multiphasic testing should be. Although we admired Dr Collen's achievement and borrowed many of his ideas, we took a slightly different pathway in our design of a multiphasic screening center.

The Kaiser Multiphasic Health Screening unit is the prototype for a number of units including the four large U.S. Public Health Service centers. It is designed basically as a multistation semi-automated multitest laboratory, which is dependent upon a large volume of patients for efficient operation. Our approach in Hawaii differs in two respects. First of all, we substituted modules for multiple stations,and we utilized specially trained registered nurses to perform the physical examination at the time of the screening procedures. This approach made it possible to conduct multiphasic examinations without large patient volume and to present a report to the physician that included a screening physical examination with a tentative statement of the medical problem and a suggested solution. Several improper uses of other professional personnel soon became evident. While we were using the clinician's time more effectively, we were wasting the cardiologist's and roentgenologist's time in reading routine EKGs and chest x-rays. (The pathologist had long ago anticipated us by having a technician screen Papanicolaou tests of the cervix for the presence of abnormal cells). We therefore started a program to train technicians to screen EKGs and chest x-rays for deviation from normalcy. Thus far, one technician has read over 5,000 chest x-rays with a missed lesion error of 5.4% on the last 1,300 reviewed. This compares favorably with two similarly trained technicians in California who missed 4% and 8% respectively. Staff radiologists at the University of California Medical School missed 6% of known lesions.[5]

One of our technicians has read over 10,000 EKGs over the past two years with less than 17 missed abnormal records in the last 250 reviewed. Review of 1,000 consecutive physical examinations performed by registered nurses and MDs[6] revealed the registered nurses performed as well as the MDs except in one area. In auscultation of the heart, the registered nurses heard three times more faint high-pitched systolic murmurs than the MDs (audiograms performed on the registered nurses in their 20s and MDs in their 40s and 50s revealed that all of the MDs had high-frequency-hearing defects.)

The registered nurses incidentally also take a cervical smear at time of bimanual palpation of the pelvic structures. Richard Anema, a former army corpsman, has been trained by Dr James Cherry of the surgical department, to perform routine sigmoidoscopies and now is undergoing training to do gastroscopy.

A high school graduate can be trained to operate all of the diagnostic hardware utilized in multiphasic screening in three to six months and a registered nurse can be trained to perform a screening physical examination in the same period of time. Quality control must be an integral part of multiphasic screening and with diagnostic technicians, registered nurses and physicians, is accomplished by peer review and consultations.

Just as the diagnostic technicians have advanced from merely running the diagnostic hardware to giving a screening interpretation of the tests such as EKG and chest x-rays, the registered nurses in the health appraisal center are now directly managing the care of patients with high blood pressure and obesity, and will soon care for patients with other chronic diseases such as diabetes and arthritis. The physician's role in the nurse management of patients with chronic diseases is one of programming the protocol to be followed and availability for consultation by the registered nurse or patient.

In our unit the cost of the examination varies from $15 to $50 dependent upon the age and sex of the patient, and procedures performed.

The medical data is fed into a computer (IBM 360/30) via punch card, stored on magnetic tape and printed out in a format similar to that of a traditional medical work-up. We are presently using a linear off-line data system but in August of this year will convert to a branching on-line data system.

In summary, by appropriate use of specially trained technicians, registered nurses and physicians; a high quality, computer stored modular multiphasic examination can be performed in a clinical setting with high and low patient volume for an average cost of about $30.

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Comparison of Health Appraisals by Nurses and Physicians

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A three-month special training program enabled nurses in a multiphasic screening unit to perform relatively accurate physical examinations.

Traditionally, physical examinations in health appraisal have been performed only by physicians. With the increasing numbers of physical examinations as prerequisites for employment or insurance and yearly physical examinations of relatively well persons, physicians are finding it difficult to meet the demand for physical examinations and also maintain quality care of their patients. To cope with this increased demand, efforts have been made to use registered nurses in health appraisals of adults and children throughout the United States.[1-3]

Although physicians have traditionally delegated many patient care responsibilities to nurses and more recently to medical assistants, they have expressed reluctance to permit physical examination by the medical assistant. Nurses' participation in health appraisal has been largely in assisting in taking patients' histories and performing certain technical procedures.[4,5]

A health appraisal center was instituted in September 1967 at the Straub Clinic, a private multispecialty fee-for-service group practice, located in Honolulu, Hawaii. The procedures followed in this unit include the following:

1. Self-administered medical history.
2. Diagnostic tests of vision, hearing, respiratory function, and Achilles' reflex time; electrocardiogram, blood pressure, chest x-ray, and urinalysis.
3. Screening physical examination.
4. Automated laboratory tests, including studies of blood chemistry and blood cells counts.
5. Follow-up of persons with questionable or abnormal findings or both.

The director of health appraisal center believed that nurses with additional inservice training could be taught to perform screening physical examinations without loss of quality. Thus, in June 1968, four nurses employed at the health appraisal center were selected to participate in the inservice training program for approximately 3 months. Their training consisted of on-the-job supervised physical examinations and attending sessions with students at the University of Hawaii School of Medicine.

Following this training period, these nurses were assigned to perform the screening physical examination, review patients' histories and results of their laboratory tests, and make tentative recommendations for decision by physicians. The purpose of this study was to analyze and compare the quality of the physical examinations performed by nurses with those performed by physicians.

Summary

A comparative study of four registered nurses' and seven physicians' observations in the health appraisal of apparently well persons was undertaken by reviewing and evaluating 1,000 patients' records. The objective was to see how well nurses who received 3 months of additional service in training could perform physical examinations and make diagnoses. The physicians' examinations were the criteria for determining the accuracy of the nurses' findings.

In 10.3% of the 16,000 independent variables, there was positive concurrence of findings by the physician and the nurse. Both the physician and nurse concurred that there was no finding in 70.3% of the variables. In 5% of the variables, the physician found a sign or symptom that the nurse did not. In 14.4% of the variables, the nurse found signs by the physician did not. Nurses had a tendency to record findings more completely than physicians. These notations generally pertained to observations of skin pigmentation and scars as well as auscultation of functional heart and breath sounds.

In view of the results of this study, there were few serious differences in recorded findings when the nurses and the physicians examined the same patients. For further validation of this observation, more fully controlled studies will be necessary.

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Nurse-managed clinics. *Other examples of health services research are the 12 nurse-managed doctor-supervised chronic disease clinics started at Straub Clinic in 1971 to 1973 with the aid of a federal grant. As noted in the following paper, they "would seem to be unnatural in a fee-for-service setting." Despite this, they flourished for a decade. Some remain but most gradually died. However, the principle is solid and the growth of capitation and managed care could see a flowering of such clinics. Dr Melvin Levin's Gout Clinic was one of these.*

Share-Care Clinics

Robert A. Nordyke MD and Fred I. Gilbert, Jr, MD

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Introduction

In the years 1971 to 1973, we received a grant for a project entitled, *Use of Allied Health Personnel in Management of Chronic Diseases*. The project's specific aim was to establish and evaluate non-physician-managed clinics for the long-term care of patients with chronic diseases as encountered in a fee-for-service, multispecialty group practice. Twelve of these

Share-Care Clinics (a name given to them by Walter Strode MD, of the Straub Clinic and the Hawaii Health Net) were started.

It took a great deal of time, money, effort and report-writing to initiate the Share-Care Clinics which have continued without outside funding since 1973. This paper will address the following questions:

- Why did the Share-Care Clinics start at all?
- What happened when they were released to fly on their own?
- How do the Share-Care Clinics compare at the end of 1975 with their status at the end of 1973?
- Which ones did well and why?
- Which ones did poorly and why?
- And, lastly, what have we at Straub learned from these experiences that is generally applicable to other practice settings?

Background of the Straub Clinic

In 1971 the Straub Clinic was 50 years old with a 78-member physician staff, seeing about 1,000 patients daily. Six years earlier, in 1965, a crisis had developed regarding physician time. Each internist was doing routine histories and physical examinations on 1 to 6 persons daily. The time needed for these routines plus the time spent examining apparently well people cut drastically into the physician's abilities to care for sick patients.

The initial response to this time crunch was to add another internist to handle the patient load, even though the addition of a physician to the organization had never been shown in the past to reduce the number of routine examinations being done by any other physician.

Therefore, as an alternative, it was decided to develop an automated, multiphasic health testing (AMHT) area the Health Appraisal Center—with the goal of using as much allied health personnel and computer aid as possible. It has been very successful. Started in 1967, it regularly screens 30 to 40 patients daily.

The creation of the Center did lessen the physician load, and still does. But this solution created a new problem. The efficiency of the automated screening system uncovered increasing numbers of persons with chronic disease who were funneled to the physicians for preventive maintenance, patient education, routine follow-up visits and repetitive monitoring. This patient group accumulated steadily, and soon constituted over half the patients seen by many of the physicians. Once again, a crisis situation required that a decision be made.

The Beginning of Share-Care Clinics

As in 1965, the first reaction was to hire more doctors. Fortunately, on reconsideration it was felt that the thoughtful development of physician-supervised, nurse-managed chronic disease clinics of the share-care type might be able to extend the ability of one physician to oversee many more patients. In addition, it was felt that the care of these patients might even be improved by the extra time and skill the nurses could provide, especially in educating each patient about his or her disease.

At this point, we were ready to revolutionize the health care delivery system; and in our grant request we said the following:

> It has been repeatedly stated over the last decade that a large shortage of physicians exists throughout the United States. This statement may be true only if physicians continue to approach patient care in the traditional manner taught in medical school. The major shortage in health manpower may not be physicians, but non-physician health personnel. A more rational use of these health workers may come closer to solving the physician shortage than the very costly efforts to produce more physicians. A critical look at the present activities of physicians leads us to believe that much of the primary and secondary screening and care of stabilized ill can be accomplished by allied health personnel under physician supervision with no loss in quality. At the same time this should multiply the physician's ability to oversee health problems and allow him to concentrate attention in the areas where his unique, as well as his major, interest lies.

With the acceptance of the grant, and with aims as stated in Figure 1, we set out to demonstrate that we were not deluding ourselves, and that nurse-managed clinics could indeed succeed.

The Clinics General

Allergy, acne, and back-neck clinics are doing extremely well without financial subsidy. Allergy has gone from 100 patients per week in 1973 to 300 in 1975; acne from 92 to 116; back-neck from 100 to 160. Others leveled off and are functioning about the same now as in 1973: Parkinson's, thyroid, hypertension, multiple diseases, and ano-rectal (Fig 2). Family planning seems to be declining. An obesity clinic never really got off the ground, even after several gallant tries using different approaches. The gout clinic, which will be discussed later, came close to dying but was rejuvenated and now shows signs of growth. For the year 1975, there were 32,000 patient visits. Collectively, they do the work of about six full-time physicians, representing perhaps 10% to 15% of the primary care work at the Straub Clinic.

Understandably, numbers of patients do not spell success or failure, so I would like to describe three sample clinics. Each illustrates a different point. The innovations in the gout clinic are

Fig 1.—Aims of the Share-Care Clinic

- To establish within a fee-for-service multispecialty group practice 12 nurse-managed clinics for chronic disease.
- To standardize and upgrade the quality of care to patients.
- To develop teaching methods to educate patients about their own diseases.
- To establish the acceptability of this method of care to patients, doctors, allied health personnel, & administrators.
- To develop standardized data collection and reporting systems for quality control, reduction of labor, storage, retrieval, and evaluation.
- To determine whether morbidity and cost per year can be reduced from traditional approach.
- To reduce physician time needed per patient while extending number of patients managed adequately.

Fig 2.—Proctoscopic Examinations at Straub Clinic

	1972	1973	1974	1975
Dr C	631	463	410	434
Dr F	147	128	153	135
Dr B	134	123	123	92
Dr D	123	83	88	
Dr S		30	69	70
Proctoscopic technician	1801	1985	2174	2016
Others	64	45	36	34
Totals	2900	2957	3053	2781

Fig 4.—Share and Care Gout Clinic Compared with Traditional Care[1]

Total Gouty Attacks		
Total No of Attacks	Group A	Group B
Before Gout Clinic	35	56
During Gout Clinic	28	21
No of Patients	25	37
Months followed in Clinic (and equal time before)	12-20	20-24

Fig 5.—Share & Care Gout Clinic Compared with Traditional Care[1]

Patients	No. of Patients	
	Group A	Group B
with More attacks in Clinic	9	3
with Fewer attacks in Clinic	12	18
with Same No of Attacks	4	16
TotalL No of patients	25	37
Months followed in Clinic (and equal time before)	12-20	20-24

relevant in terms of quality control; the thyroid clinic is important for its record keeping approach; and the back/neck clinic is important in an economic sense.

The Gout Clinic

In establishing the Gout Clinic (as in each other clinic) we defined three stages of management (Fig 3): evaluation, stabilization and chronic maintenance.

In the Gout Clinic the physician and the nurse practitioner together do a great deal of work in the original patient evaluation, whereas in the Hypertension Clinic the nurse-manager is not involved in this phase at all. A great deal of attention was paid to patient education, using audiovisual materials including a home-developed videotape.

The records of this clinic were reasonably good, but not computerized, and somewhat difficult to extract later.

The traditional care of gout patients as done previously at Straub by the rheumatologist and other internists is contrasted with the care now available in the Gout Clinic (Fig 4). Group A were patients followed for 12 to 20 months, and Group B were followed for 20 to 24 months in the clinic and an equal time before. It should be noted that there were 35 attacks of gout in Group A and after the establishment of the Gout Clinic, the number of attacks dropped to 28. In Group B, which was followed longer, there were 56 attacks of gout while the patients were under the care of physicians, and after the establishment of the Gout Clinic there were 21 attacks.

Figure 5 is another way of looking at the results. Nine Patients in Group A had more attacks, 12 had fewer attacks, and 4 stayed the same. In Group B, the longer one, three had more attacks, 18 had fewer, and 16 stayed the same.

Gout Clinic Compared with Traditional Care

> Of all the data that assess quality of medical care in gout, it seems that the number of attacks of gouty arthritis in a given time period should be the most significant. Certainly this is true from the patient's viewpoint. The fact that the ... clinic experienced a reduction in attack rate over that of traditional physician care is most impressive, particularly when one realizes that the majority of prior care was rendered by specialists.

The major point about the Gout Clinic is that in both process and outcome analysis, the quality of care appears to be at least as good in the clinic as in standard, traditional one-to-one physician care.

The Thyroid Clinic

The Thyroid Clinic, unlike the Gout Clinic, was never intended to be a nurse-managed clinic, per se. Instead it is an LPN-computer-MD working clinic which attempts to maximize data gathering. The data is gathered, tabulated and partially analyzed, after which the physician steps in. It saves him or her a great deal of time. The LPN gathered the data and kept precise records. Crucial judgments are then made by the physician or the computer in a minimum of time; and typing, record transfer, and data retrieval are done by computer. In this way it is possible for one physician to oversee 18 patients from the Gout Clinic, up to 20 new and old thyroid patients, run an active nuclear medicine laboratory, and still have a portion of the day unscheduled.

The record-keeping method was presented last year in the Advances in Patient Care Publication.[1]

The real down-to-earth value of the LPN-computer system lies in the time saved: 12 minutes per patient for the physician. The amount of repetitive and laborious work in primary data-gathering and reporting is minimized, freeing approximately two hours per day for both staff and physician.

The Back-Neck Clinic

The Back-Neck Clinic was started primarily to reduce the large load of one type of routine, repetitive problems seen by the orthopedist. This clinic has a structure similar to the other nurse-managed clinics. In 1973, the nurse practitioner examined 3,200 patients or about 20 per day. In 1974, the patient load increased to 3,500 with an 11-day waiting time. The maximum per day patient load was 29. In April, 1975, a second nurse was trained by the nurse practitioner. The total number of patients examined in 1975 rose to 4,600, with each nurse seeing a comfortable 15 to 18 patients per day with no waiting time. The two nurses do the equivalent workload of one and a half to two full-time orthopedists. Supervision on the part of the orthopedist requires about one hour per day.

It is the current opinion of the four-doctor orthopedic department that the Back-Neck Clinic is indispensable; that the quality of care is equally good or better than what was previously available; and that the records and documentations are definitely better (this is confirmed by our legal department). Importantly, the patients like it very well.

A third nurse will be needed soon, and the area is becoming crowded. But these problems do not detract from the fact that the Back-Neck Clinic is a life-saver for both the doctors and the patients.

In September, 1974, an administrative economic analysis found that in comparing the first six months of 1974 to the same period in 1973 in the total Orthopedic Department, the income

Fig 3.—Stages of Patient Care Management	Personnel Responsibilities	
	NURSE-MANAGER	SUPERVISING PHYSICIAN
STAGE I: The Evaluation Period	1. Take and record weight, tempurature, blood pressure. 2. Take initial history. 3. Complete primary evaluation form. 4. Perform limited physical examination. 5. Refer patient to supervising physician. 6. Complete laboratory/x-ray requisitions. 7. Make return appointments.	1. Review, clarify, and amplify if necessary the history and physical examination performed by nurse. 2. Confirm data as necessary. 3. Order necessary laboratory/x-ray procedures. 4. Make diagnosis. 5. See all new patients for evaluation. 6. Complete prescription forms. 7. Refer course of disease and therapy to patient.
STAGE II: The Stabilizing Period	1. Take and record weight, tempurature, blood pressure. 2. Take interim history. 3. Record patient's complaints. 4. Review low purine diet. 5. Reinforce patient education and hand out pamphlet, "Gout". 6. Review exercise regimen. 7. Show patient audio-visual film. 8. Answer patient's questions. 9. Complete laboratory/x-ray requisitions. 10. Make return appointments.	1. Review all data gathered by nurse. 2. Answer patient's questions to disease and in general. 3. Prescribe and renew medication. 4. Set returning schedule. 5. Refer patient to nurse for further education and explanations. 5. Refer stabilized patients to the nurse. 6. Provide supervision and consultation for nurse-manager.
STAGE III: The Chronic Maintenance Period	1. Schedule patient for annual physical examination. 2. Renew medications as indicated. 3. Lead group discussions as necessary regarding patient education film.	1. See all stabilized patients once a year. 2. See patients upon request of patient and/or nurse. 3. Review data gathered by nurse and review patient's chart. 4. Review patient's disease course and medication with nurse as necessary. 5. Sign all prescriptions. 6. Provice supervision and consultation for nurse-manager.

(corrected for changes in charges) increased 11.4%, and there was a 24.5% increase in the number of patients seen by the Department.

Advantages of a Successful Nurse-Managed Clinic

The primary advantage of a successful nurse-managed clinic is in quality of care, which is at least as high as the one-to-one physician care. The patients like the clinics very well, which we have corroborated recently by a statistical study. They take a large load off of the physicians, especially in terms of "routine" work. They increase the interest and responsibility of the nursing staff, thereby rekindling a sense of excitement in their work. They improve record keeping legibility, completeness and retrievability; and allow the physician to concentrate on what he or she prefers to do, and what he or she can do uniquely.

Disadvantages of a Nurse-Managed Clinic

Of course, some disadvantages exist. A successful clinic can greatly increase the size of a practice, and for primary care physicians this may create night call problems. A few patients insist on being seen by the physician every visit, some for valid reasons, some not. The third problem which occasionally arises concerns physician ego. As the nurse-managed clinic becomes stronger and more competent, other physicians within the group may feel threatened. At least in the fee-for-service setting, they are often reluctant to send their patients to the Share-Care clinics for fear of losing their patient.

Elements of Success in a Clinic

What are the elements leading to continued clinic success? Why do some clinics thrive while others do not? The first requirement is an aggressive and confident physician. The second (even more important) is an aggressive and confident nurse. The workload of the supervising physician must be high, to the point where the physican feels pushed or else the clinic won't succeed. There must also be a high education component. In the best clinics there must be independent judgment by the nurse, and an accompanying feeling of responsibility. The nurse is the obvious center force in a nurse-managed clinic, and turn-over of the nurse is disastrous. Lastly, of course, the clinic must have enough volume to keep it financially in the black.

Given these conditions, what can lead to failure of a clinic? Insufficient patient volume for whatever reason is detrimental. If the doctor changes, it is devastating. If the nurse changes, it is even more devastating. And, if the physician's patient load is insufficient, chances are that the physician will begin taking over the nurse's job responsibilities.

The Nurse-Managed Clinic and the Fee-For-Service Practice

As a final statement I think it is only fair to say that nurse-managed clinics would seem to be unnatural in a fee-for-service setting. Drs Collen and Garfield of the Kaiser system reported at this conference a year ago that their automated health testing reduced the need for total services considerably. Such success might be expected to strike terror in the hearts of fee-for-service adminstrators. The possibility that nurse-managed clinics could, especially through intense patient education, decrease the number of patient visits per year, might strike a similar note in administrative hearts.

However, given the statistics of our more successful clinics, we believe that they really are natural in this fee-for-service multispecialty setting. To extract them now would be close to impossible. They are good for the physician; they are good for the nurse educator; they are even good for the administrator; and most of all they are good for the patient.

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THE COMPLETE MAN

Any tribute to Dr. Fred I. Gilbert must take into account the incredible diversity of the man. Doctor, lecturer, tireless researcher into the causes of disease, author of over a hundred medical journal articles, innovator of health testing systems, campaigner for affordable health care for the Hawaii community, member of the prestigious Institute of Medicine and National Academy of Sciences, and philanthropist — donating his own funds to entities like the Pacific Health Research Institute. The list goes on and on, because Dr. Gilbert was that rarity among rarities: a true Renaissance man.

We are proud to have known him.

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Appropriate Use of Technology

Fred Gilbert was always "steeped in the old but espousing the new." The accelerating technology revolution greatly interested but also concerned him. While technological advances were conceded to be important, he was always troubled about their appropriate use. The following article reviews his hopes and misgivings. In it he makes the bold suggestion that a percentage of income from equipment should be set aside for research on outcome effectiveness.

The Appropriate Use of Technology (Particularly in Medical Problems of the Elderly)

Fred I. Gilbert, Jr, MD

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Technology, particularly high technology, with little solid data, is often blamed for much of our increasing cost of health care. Politics and emotions are poor substitutes for accurate information needed for rational solutions. By targeting the desired outcome and studying the process needed to reach the outcome, we can make better decisions. The methods of designing, conducting and funding the studies needed to answer the difficult questions posed by the use of high technology in the elderly are available. Do we have the wisdom to use them?

Introduction

Technology is enormously useful in most fields of medicine but is frequently used for the wrong problem, on the wrong patients, and at the wrong time. I will discuss those issues that contribute to the improper use of technology and the means of resolving them.

I direct my concerns regarding the appropriate use of technology to the elderly, because there are so many of them and because they are the recipients of most of the misuse of technology. (Webster, incidently, defines elderly as "somewhat old, between middle and old age.")

My observations are drawn from 25 years of experience as a practicing general internist, followed by 15 years as a specialist in the field of nuclear medicine. As a general internist, the technology that I used most frequently and continue to use is that wonderful creation called the ballpoint pen; it is followed in importance by the telephone, and at considerable distance by the stethoscope, reflex hammer and EKG machine. The field of nuclear medicine, on the other hand, requires the creation of images from gamma rays detected by very expensive cameras that count data reconstructed by complex computer manipulations.

Technology

What is the magnitude of unwise use of technology? From the standpoint of costs, the Office of Technology Assessment found almost one-third of increased spending for Medicare was due to medical technology.[1] The 11% of the population over 65 consumes 50% of the federal health budget, and slightly less than that in terms of physicians' time. There is no question in my mind as to whether patients can be better served with the new technologies than previously. The answer is yes, they can be. Virtually all of what we call high technology in medicine has emerged since I started to practice in 1946. If that high technology didn't exist, we didn't have to worry about it.

In short, if a physician completed medical school and residency in the late 40s and attempted to practice today without access to the technological advances of the last 40 years, he would find considerable difficulty in dealing with most clinical problems of any magnitude. I have a strong feeling, however, that his patients of yesteryear were more satisfied with his efforts, if not his results, than they are now.

Certainly many, if not most, of the new procedures present the patient with less risk to life and limb and with often measurably better outcomes than those of the past. As an outpatient procedure, we can slip a marvelously designed piece of equipment called a pacemaker beneath the skin of the chest and with a wire attached to the heart, correct life-threatening disturbances of the heart rhythm. With new techniques for studying the brain, we have replaced uncomfortable, risky and costly procedures such as pneumoencephalograms and most cerebral angiograms.

To What Purpose?

I could go on with examples of the positive benefits versus risks, including risks to the pocketbook as well as to the person, by the new technologies. The problem, however, is not with the new technologies. The problems—and they are multiple in different arenas. These include questions such as who decides and under what circumstances is the technology to be used? Who pays for it? Who is to receive it? These questions in turn are shaped by another level of questions.

What is the cost of not using technology? In the past, a physician would examine a patient with a headache after taking a history and then make a decision as to whether or not to proceed with further tests, and usually decided not to. Now, although the physician knows that almost all CAT scans performed for headaches are a waste of time and money and often carry a risk to the patient's health, he also knows that a malpractice suit can result from the failure to carry out such a scan. He, therefore, orders it as additional malpractice insurance.

Patient and family expectations also play no small role in a physician ordering procedures for reasons other than medical indications.

It also should be noted that most physicians, particularly subspecialists, derive a sizable portion of their incomes from technological gadgets rather than from their knowledge, judgment, compassion and understanding. Every natural body orifice permits at least one instrument to be inserted by one or more

specialists. If an instrument with a light on one end cannot be inserted down the gullet or windpipe or up the rectum or through the urethra, or into the ear or nose any good "ologist" lacking a natural orifice can always make an unnatural one through which he or she can introduce a costly instrument. It is not that procedures such as gastroscopy, colonoscopy, and bronchoscopy, with the ability to biopsy suspicious lesions under direct vision, are without value. With proper indications, they are of great value in diagnosis and management of many problems. On the other hand, they almost certainly are performed too frequently on too many people at too great a cost.

So are most other procedures we physicians perform on inpatients and outpatients.

At this point, I have made some very dogmatic statements and you should be asking where is the hard data to support my contentions. Unfortunately, medicine until recently had not tried to answer questions such as: How many normal "oscopies" or CAT scans or blood chemistries is it reasonable to perform before finding an abnormality that results not only in additional tests or change in diagnosis or management but in a significant difference in outcome. We are so concemed about false-negatives with all of the implications of a missed diagnosis that we overlook the enormous mischief that is produced by the false-positive results of tests and procedures.

Morris Collen MD[4] of the Kaiser Permanente Group in Oakland is one of the few physicians who has carefully kept information for the past 30 years on patients who have undergone multiple tests as a part of multiphasic testing. He found only two tests that made any difference in the outcome as measured by decreased rates in death and disability. These were blood pressure readings and proctoscopy. All of the millions of other procedures being routinely performed on apparently well people throughout the nation appear to have had little influence on improving health. In fact, just the reverse may be true in that many procedures have an adverse effect on health.[5]

How Appropriate?

Why has medicine not made greater efforts to answer basic questions like what is the appropriate use of technology? I am convinced that at least part of the answer to that question is the fear that the answers may be financially harmful to much of the entire system. This includes the manufacturers of the equipment, the marketing and sales staff, as well as the physicians, technicians and hospitals that use the equipment. It would, however, be too cynical to attribute this solely to self-serving inertia on the part of the medical care system. There are very real problems in trying to evaluate the benefits of technology.

Technology, particularly new high technology, changes fast. Often by the time a study is designed, approved, and financed, the technology has changed so much that the study will be irrelevant before it gets underway. For example, soon after a study is designed to determine the cost-effectiveness of a second generation x-ray CT or nuclear scanning unit, a third generation unit enters the arena. This unit is said to have improved hardware that permits better resolution with reduced radiation risk, faster through-time at less cost. This creates two big problems for the investigators. First, if they still want to carry out the study, they have to rewrite the proposal and secure new approval by the granting organization. Second, they contribute to the cost of medical care by convincing the hospital to purchase the newer, as yet even less verified, equipment. Even under ideal circumstances, evaluating technology is costly, frustrating, and extremely demanding of time and talent.

Some Answers

With this background of unanswered questions and additional problems, your concerns and mine should be: Is there any way that we can find the appropriate use of technology.

We have already noted that it is not the technology but its inappropriate use that is the problem. Some of the solutions that were proposed in the past are:

1. **Rationing.**—Use of high technology only for those problems where there is a reasonable probability of correcting or modifying a condition that will result in survival for a long enough period of time to justify the cost of the procedure and intervention. This is being used in England for renal dialysis and renal transplant for kidney failure as the model. The English achieved rationing by assigning a fixed budget for end-stage renal disease. If you overspend the hospital or clinic budget, no more dialysis or renal transplants will be done until next year.[6] This appears to be working rather well in England. Most of us, in our land of plenty with presumed unlimited resources, have difficulty in accepting finite medical resources and rationing, but this is changing.

2. **Peer Review.**—The peer review mechanism with both the prospective and retrospective reviews being continued and expanded. Medicine as a profession has always supported the concept of peer review—to have your performance judged by your peers rather than by outsiders. A cardiac surgeon reviews the performance of a cardiac surgeon, an oncologist of an oncologist, and so on. People who live or work in glass houses shouldn't throw stones. If their livelihood requires working in one, they seldom will. On the other hand, if a generalist is enlisted to review the appropriateness of the specialist's decisions in using high diagnostic or therapeutic technology and disagrees with the decisions made, his opinions are apt to be disregarded because of lack of expertise. In my opinion peer review, including the original PSRO or its descendants the PROS, is not the proper vehicle to resolve the use of technology issues.

3. **A Fixed Budget.**—A fixed budget for management of all health problems of a geographically defined area. This is another form of rationing, across the board rather than for a specific technology or a specific medical problem: It does permit the geographical area to define its own priorities which have merit.

4. **Education.**—Education of both physicians and patients as to realistic expectations of the use of technology along with any combinations of other efforts to prevent misuse of technology.

All of the above approaches have some merit, but for the greater part we cannot use them properly because we have never bothered to gather and analyze the information we need to make rational decisions.

Conclusion

Here we are then in 1990, in a nation over $3 trillion in debt, finally realizing that our resources are finite; that our elderly are getting older faster than they are dying off; that a nation that seems to be pinning its future existence on service industries is in deep trouble.

Fortunately, there is a solution to the proper use of technology. It neither has been formally proposed nor considered. It is a solution that does not require decisions.

The first is that any technology, new or old, having met safety requirements, must also meet requirements as to efficacy under

specific circumstances.

This in turn would necessitate answers to such questions such as: "Does the procedure significantly alter the diagnosis, treatment or outcome of the disease (with major emphasis on the outcome), and at what cost?

This would require research design and methods, data collection and analysis applicable to the technology and medical problem under study. Knowledge, skills and funds would also be needed. The funds would be generated by the technology being investigated. A certain percentage of the fee for the service, say 10%, of the charge for new high technology with poorly documented or undocumented efficacy would be set aside to investigate the technology. As done with other research projects, patients would be informed as to the details, including the reasons for the study. The hospital or clinic using the equipment could participate in the study and recover part of the costs for such research by being paid for the data obtained but the research study itself would be designed and carried out under supervision of a disinterested investigator. Similar efforts could also be applied to long-established, low-level technology such as routine blood counts and even urinalysis. This would make it possible to shift disproportionate efforts in cost control to more reasonable efforts to define the proper use of technology, with cost control as an important by-product.

In conclusion, if technology high or low is to be used appropriately, we have to stop thinking of increasing the size of the medical monetary pie with an increasing share for everybody including those involved in high technology. This will not happen because the pie is not going to get much bigger.

We must also escape the narrow thinking that is bred by increased specialization with major efforts spent in protection of turf and the kind of mentality that builds bridges over River Kwais.

Medicine is a part of our social structure. Physicians must step out of their narrow roles and assume broader roles as citizens by using their knowledge and experience to solve one of society's major problems - the appropriate use of technology in that large and increasing segment of our population that we call the elderly. We physicians can perceive ourselves as guardians of the past and protectors of special interests, or we can boldly and unselfishly move ahead and lead the way to the solution rather than continue to be part of the problem.

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The Reorganization of Health Care

For at least four decades Fred has been fighting for—and to some extent bringing about—the reorganization of health care. As he saw it, the requirements for real change are group practice, prepayment capitation, a primary care base, greater patient input, a new cadre of health workers, automation, and physician education modified to better oversee "the one hundred upright patients for every one horizontal in the hospital." But these alone won't do it. Fundamental changes in the way medicine is practiced are needed to pull the elements together effectively, and brought about by health services research. These changes will take place with or without governmental intercession. He hoped we could do it ourselves.

Health Maintenance Organizations in Hawaii

Fred I. Gilbert, Jr, MD

Health Maintenance Organizations in Hawaii
(Unpublished—Circa 1972)

President Nixon's strong support of Paul Ellwood's concept of health maintenance organizations a year ago stimulated interest in HMOs throughout the nation. Hawaii, however, as a monarchy, as a republic, as a territory and, since 1959, as a state, has had experience with health maintenance organizations extending over 100 years. Even before the arrival of Captain Cook in 1778, there was a recognized need for health maintenance organizations. Woven into the complex Hawaiian society were a series of *kahuna*, or priests, who were highly specialized. Some *kahuna* would specialize in selecting the proper koa tree to make into a war canoe. Other *kahuna*, called *kahuna lapaau*, or medical *kahuna*, specialized in preventive and therapeutic medicine. This was necessary to some degree because the gods at that time were also specialized. No ancient Hawaiian would depend on one god or one *kahuna* to care for his or her needs, medical or otherwise. I was not able to determine whether or not the *kahuna* were reimbursed on a fee-for-service or a prepayment capitation basis, but I rather suspect that they had a pluralistic arrangement at that time and used both methods. All in all, the *kahuna lapaau* did quite well for their patients and before the arrival of Captain Cook the Hawaiians died of old age, accident or war injuries. Soon after the arrival of the *haoles* (foreigners), major epidemics began to sweep the Islands. Cholera or bubonic plague appeared epidemically in 1804 and a smallpox outbreak in 1853 killed thousands of Hawaiians and resulted in stricter public health measures. A Board of Health had already been established in Hawaii in 1850 and the Hawaii Medical Association was founded shortly thereafter in 1856. Whalers on the whaling fleet, for example, were not permitted by the Board of Health to leave their ships without proof of vaccination.[1] In the late 1800s, the development of sugar production as a major industry in Hawaii strongly stimulated the development of health maintenance among the laborers. Unlike most migrant workers on the mainland United States, the sugarcane laborers received contracts to work on the plantations. Except for a brief and unsuccessful effort to induce Native Hawaiians to work in the fields, most of the laboring force came from the Orient, particularly from Japan in the 1870s and 1880s. In a contract made with the immigration authorities, the plantation management was required to make a capital investment in the workers before they arrived in Hawaii by paying for their transportation and providing housing on their arrival in Hawaii and a guarantee of three years' employment at $3 a month. By 1880, the Rhodes bill was introduced to provide medical care for contract laborers. In 1885, the manager of Waiakea Mill, which had recently imported Japanese contract laborers, wrote, "I tell them to eat plenty of vegetables and occasionally send them a box of Irish potatoes, cabbage, bananas, vinegar, etc. I find this is as cheap as to pay doctors." The manager in those days was required to see all patients with ordinary illnesses. The physician was summoned in cases of severe illnesses.[2] This mechanism of requiring the manager to see sick patients resulted in management's direct involvement in health maintenance. Shortly after the Waiakea Mill closed down in 1948, I did a year's locum tenens for Dr Sam Brown, who had been the plantation physician for many years. In going over his records, many of which were stamped "Waiakea Mill," he noted with considerable pleasure that after the plantation mill workers had free choice of their physician, almost all of them continued to keep him as their physician.

By 1901, government doctors were staffing community health centers throughout the Islands. These centers made medical care available to all citizens regardless of ability to pay and anticipated by almost 70 years the Federal proposal to develop community health centers in areas lacking adequate medical care. Every large plantation had its own hospital, usually combined with its outpatient services. Hospital costs in 1901 were running about 70¢ a day. By 1925, the cost had risen so high that the plantations began to withdraw from the Kohala Plantation to the County of Hawaii with the patients paying $2 a day. Major surgery at that time ran about $15 an operation and minor surgery $10. The County of Hawaii objected to the $2 a day because they insisted that the true cost of caring for a patient was approximately $2.25 a day. The public statement by hospitals that costs always exceed charges has persisted in Hawaii to the present, and I understand that it is also prevalent in other parts of the United States.

Largely because of the efforts of a very imaginative and practical internist, Dr Nils P. Larsen, plantation medicine with the plantations underwriting all costs for preventive and therapeutic care was by many measurements better than the rest of the Territory. Mortality figures in 1931 indicated that the plantation medical care was considerably better than the rest of the Territory and was certainly the best care for agricultural workers in the world. According to Al Yuen of the HMSA in 1972,

plantation clinics included birth control, day-care nurseries, noon meals as well as conventional general medical and surgical care to approximately 100,000 sugar workers, including their families. The physicians, hired by Larsen, provided top-rate primary care for the plantation workers without a direct fee for service. A number of the plantation physicians did, however, care for patients from nearby towns and charged fees for services.

The decade after World War II saw a decline of the Hawaiian style of health maintenance. This was due to (1) unionization of the plantations with insistence that the recently developed specialistic services would be made more available to plantation workers and that the workers have a more direct say in the selection of their physician. (2) The increased access to medical centers and specialists in Honolulu by air transportation. (Prior to World War II a trip between the Islands was usually made by steamer. The DC3 was introduced in 1941 and changed an overnight trip by steamer to less than an hour by air.) (3) The sharp increased cost of medical care associated with more costly medications, procedures and specialization all of which hastened the plantation management exit from direct involvement in medical care. (4) The emergence of state-wide medical insurance plans, such as HMSA, which made it possible to spread risks over a broader population with continued coverage in geographic areas other than the patient's plantation. At present, the Waialua Plantation on the Island of Oahu is the only real remnant of plantation-type HMOs. Here, two physicians give primary care in the form of more than 25,000 office visits a year and 3,000 hospitalized patients a year.[3]

The appearance of the Kaiser Plan in 1958 introduced a new type of HMO to Hawaii. The rapid expansion of the Kaiser Plan over the last decade has made it now second only to HMSA in numbers of insured. More than 80 physicians are now practicing in the Kaiser Permanente Group which makes it equal in size to the 50-year-old Straub Clinic with its traditional fee-for-service practice. I might also say that group practice on a fee-for-service basis has long been established in Hawaii. Until the last 10 years, this was almost entirely confined to Honolulu on the island of Oahu. At present, there are practicing groups on all of the major islands with approximately half of the population of the islands being cared for by physicians in group practice.

HMOs are similar to the Kaiser Permanente Plan, basically a capitation plan in which a cost per *head* for total health care is spread out over groups of people and over periods of time. Cost effectiveness presumably would be enhanced by having both providers as well as recipients of health services share in financial losses due to ill-advised use of health workers and facilities. Effective use of health care resources should, on the other hand, financially reward both providers and recipients of health services.

Two new HMO plans are emerging in Hawaii. One is outlined in a grant proposal submitted to the HEW by HMSA,[4] the local Blue Shield plan which insures approximately one-half of the population of Hawaii. The other is a grant proposal being prepared by The Foundation, a corporation under the jurisdiction of, and a subsidiary of, the Honolulu County Medical Society. The HMSA HMO plan would provide all participating subscribers within the state the opportunity to select a group of physicians to provide their basic medical care. Tentative arrangements have been made with three group practice clinics on the outer islands. HMSA, like CPS, draws upon some 35 years of health insurance experience with the personnel and data control capabilities to move into this area.

The Foundation HMO grant proposal will explore the presence of a proper market for self-insured HMO groups. Initially, this would be directed toward groups of workers, particularly unions. Each union would process its own claims, write its own claim checks and have peer review of claims at the union level.

The Foundation would provide:
1. technical support
2. fiscal advice and counsel
3. peer review and disciplinary action.

The Honolulu County Medical Society Foundation has had experience since June 1970 with providing this service to the Roofer's Union here and could extend its capabilities to a larger HMO group. The cost of this support is relatively low—only 40¢/month on a capitation basis—and would amount to perhaps 2% of medical costs if the HMO plan is established.

On January 1, 1972, the Maui Medical Group, with the Hawaii Medical Service Association as the insurance carrier, established the state's newest HMO. This HMO/HMSA plan is presented as an alternate to the regular HMSA plan, the only stipulation being that only group membership is available under the HMO plan. This is to reduce bad risks.

The rates for the two plans are very similar. Regular membership, single member, being $13.86 as opposed to HMO of $14.20; family membership, regular $38.86 and HMO $41.20. HMO members will pay $1 for each visit to the clinic. Covered will be physical examinations, educational programs, procedures by allied health personnel as well as other comprehensive health care services. A consumer advisory group will include representatives from the general membership, labor, management, the Maui Medical Group, and HMSA.[5]

In summary, Hawaii has had a long experience with medical care plans incorporating many features of HMOs. I personally believe that prepaid capitation plans incorporating HMO concepts provide a structure that makes certain badly needed innovations in medical care delivery possible. However, I agree with Dr Sidney Garfield[3] and James Vohs[5] who have had much firsthand experience with the Kaiser Plan. They correctly indicate that HMO's capitation prepayment by itself is a small part of the solution. Improving the organization and distribution of health services.[6] The important issue is not simply how medicine is paid for, but how it is practiced. This mean in addition to how it is paid for a much wiser use of existing and as yet nonexisting manpower coupled with the wise use of technology is needed.

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Reorganization of Medical Practice Its Influence on Patient-Physician Relationships

Fred I. Gilbert, Jr, MD

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No physician in the United States, no matter what he practices or where he practices, can help being aware of the powerful surge of change on the medical scene over the last few years. Never has there been more said and more written in the field of medical care than there has been over the last five years. Politicians, economists, insurance experts, hospital administrators, labor leaders, industrialists, educators and even patients and physicians have all had their say. The passage of Medicare has been followed by a series of three-letter health laws, the RMP, the OEO, the CEP, and the CMP. The physician has been repeatedly told that the passage of each new bill will have an even greater influence on the practice of medicine than its predecessor or any previous single piece of legislation. We neglect our patients while sitting in committee meetings designed to work out ways to ease the shortage of physicians. In spite of all this massive effort, the problem worsens, programs overlap programs, monetary bait captures a few but frightens many. The problem, simply stated, is that large numbers of people in this nation are economically, culturally and geographically isolated from good medical care. I define good medical care as physicians defined it in 1969. The patients would define this differently. Systems analysts and experts in cost benefit ratios would define good medical care in still different terms. All might be right with their own definition.

Every major change in science or art must be preceded by a change in philosophy. This philosophical shift in American medicine is really a very slight change from the philosophy long held by physicians. We have said that we will take care of anyone who requires our services regardless of race, color, creed or even economic status. This has been more recently restated that good medical care must be available to all citizens as a basic human right. This is, of course, not the same as the previous statement, but while intellectually we might have trouble accepting this, practically we cannot disagree. The real shift in philosophy, then, is that good medical care must be available to all citizens no matter who they are or where they live, whether in the hills of Appalachia, whether in the slums of New York or in the back lanes of Nanakuli. This, of course, changes the whole picture; no longer can I sit in my office on King Street in Honolulu and tell the world that I will take care of all who come to me. In reality, I had already stopped seeing all who sought my care because of state laws that make it possible for medically indigent patients to receive treatment at certain hospitals but not in my office. True enough, I might see the same patients at no charge during my stint in the hospital wards or clinics, but this is really not the same as a free choice on the part of the patient. But beyond this technicality it now becomes my responsibility yours and mine to see to it that all members of our community and our country are not denied medical care for any reason, even if that reason is the price of cab fare. This makes an entirely new game with a new set of rules. How do you get physicians and other health workers to move from group practice in a pleasant university town with good schools and other cultural advantages to a solo practice in a rundown office in a ghetto area with a high crime rate and poor schools? The need of a community for good medical care is a strong compelling force, but by itself is not enough. The answer, of course, is that medicine does not and cannot stand alone within a community. It must properly be considered as an integral part of the total community, its housing, its schools, its parks, its art and culture or a lack of these things within the community.

If the problem, then, is the isolation of the consumer from the product, the patient from the health services, and need has thus far not resulted in a solution, what then are the leverage points in solving the problem?

1. **Economics.**—Making available funds for medical care through private and governmental insurance and other sources may attract some physicians to areas with high needs for health services. Welded together about such economically based health services are such plans as the Health Insurance Plan of New York, Kaiser Plan, and others.

2. **Organization.**—The removal of some of the professional and cultural isolation of health workers, including physicians who would practice in high need communities, requires effective affiliation with other health workers in universities and clinics. The more complex organization of health services also requires a much higher level and supply of medical management personnel and techniques than are presently available.

3. **Education.**—This is probably the real key. Schools of health sciences must reorient teaching away from the almost exclusively organ-disease centered curriculum to a patient-society oriented curriculum. This is difficult because professors are no more eager to throw away their lecture notes devoted only to disorders of organs than physicians are to adopt new approaches to patient care. However, the students will soon insist that they do precisely this, just as patients will insist that physicians develop more effective systems of health service delivery.

What will be the organization of medicine then? First of all, the increase in group practice is inevitable. There are too many advantages to both physician and patients to have it otherwise. The group practice I am speaking of bears only a superficial resemblance to group practice as we know it, where physicians are practicing in much the same one-to-one manner as their grandfathers did. An effective group practice means more than the sharing of overhead, administration, accounting, and laboratory services, and more available consultation. It means a full realization of the potential of an outpatient-based comprehensive medical care system.

Second, the cost of medical care will be more broadly spread over groups of people and periods of time by prepayment capitation plans. I can see no real alternative to this either.

Third, there will appear shortly on the medical scene a new cadre of health workers, many as yet unnamed. Assistant physicians, diagnostic technicians, surgical technicians, and a whole series of aides are a few of the people who already are finding their way into areas of medicine with desperate need for these people.

With improvement in industrial design, automation, and increasing use of the computer, the technical aspects of medicine are made easier. The physician who insists on having a purely

technical relationship with patients runs a very high risk of being replaced by another less expensive technician or a machine. A physician who is functioning as a machine deserves to be replaced by one. A whole series of diagnostic and therapeutic procedures now done largely by physicians are beginning to be done by non-physicians. These range from a simple procedure such as taking the patient's temperature to more complex activities as interpreting EKGs, performing cardiac catheterizations or proctoscopic examinations.

Here in Kansas, Lewis and Resnik have already demonstrated that a nurse can manage the care of certain phases and aspects of chronic diseases better than physicians. Nurse-managed ambulatory clinics with patients receiving strong supportive therapy by the nurses apparently result in less disability from the chronic disease than similar clinics run by internists.

We, then, must think not only of patient-physician relationships but patient-machine relationships (or interfaces), patient-nurse relationships and patient-paramedical relationships. This whole matter of the patient-physician relationship is extremely important because in this relationship is defined the physician's role in our society.

There exists between patient and physician an unwritten contract that goes into effect when the patient asks the physician to take care of him. The physician, by applying a bandage or looking down the throat, indicates that he will. All of us know that this arrangement no longer holds in quite the same manner. When a patient asks such a question, whether expressed in words or not, the physician now replies, "It depends on whether or not your present or future illness matches my speciality or subspeciality." This relationship between patient and physician for several million people in the U.S. has been formalized by written contracts. Groups of physicians, through an insurance plan, agree to take care of certain specified diseases for a certain period of time for a prepaid fee.

The group assumes the responsibility once held by the individual. The "I" in the unwritten contract becomes replaced by the "We" in a written contract. The relationship then becomes a patient-organization one in which the organization, not the patient, decides who is to treat him. Patients often find that the technical aspects of health services are easier to organize into a system than are the professional or human aspects. They seek more and deserve more than technology.

There are other implications to this relationship which in its definition of the responsibility of a physician to a patient indicates a job description of the physician. The schools of medicine use such a job description of their faculty members as guides for admission of students to medical schools and around such job descriptions build their curricula. We therefore continue to create a large excess of physicians trained to care for horizontal patients in hospital beds.

In contrast, our education of physicians and other health workers to care for the one hundred ambulatory patients for every hospitalized one, is hopelessly inadequate. A few years ago perhaps the education of a physician as a junior scientist may have been defended on the grounds that we had to pound all of those facts into his head in a very short period of time. The human brain was regarded as a poorly designed structure incapable of storing all the medical facts appearing in the tons of medical journals published every year. We fragmented medicine into specialities and subspecialities largely because of what many regarded as a gross error in brain design. The truth is that the human brain is quite a remarkable structure, clever enough to provide its owner with books, and more recently computers, as storehouses of knowledge. The physician then is freed to function as a scientific humanist to creatively analyze the biological maladjustment responsible for his patient's disease. The physician must be prepared to combat the cause of disease whether it lies in his patient's environment, his society or within himself.

The physician of the near future must function as a technician and accept this role, or he must function as a true professional creating new health workers where needed and organizing about him the new people and technologies to improve the care of his patients. If there is thoughtful consideration of the patient as well as his disease, patients will accept these new interfaces and all participants, including the physician, will be the better for it.

Summary

Health Care in the United States: The Need for a New Paradigm

Fred I. Gilbert, Jr, MD

Excerpts from Hawaii Med J. 1993;52:8-13.

American medicine, as practiced at the close of the 20th century, has some major problems that we categorize as being "upside down, inside out, and backward." Fortunately, these are correctable.

First, it is upside down. Primary care should be the foundation of the structure upon which the entire practice of medicine is built. However, it is not working that way. Specialists and subspecialists have become the wobbly foundation of health care in America. This makes our care system *upside down*, with the underpinning being procedure-oriented specialists who get only a glimpse of whole patients and their needs.

That is not the only problem. The system is also *inside out*. The key person in the entire system, and the whole reason for health care, is the patient. The patient has become lost within a very complex, disconnected system. The welfare of the patient should be the core that provides the energy that drives the system. Does it really work that way? Not quite. The patient, not necessarily his or her welfare, sometimes becomes the grist for the medical mill. The system is turned inside out.

And it is *backward*. But how can we believe the American health care system, which has made such enormous strides in the last century, can be called backward? There is no argument regarding the high peaks of achievement in both research and practice; but there are deep valleys with a persistent and increasing percentage of the U.S. population (with the exception of Hawaii) that has no health insurance coverage. In addition to 30-million people without health insurance, there is a worsening of many of our vital statistics. Infant mortality is increasing as is mortality from many preventable diseases such as lung cancer. Patients, their physicians, the government and insurance carriers are all dissatisfied with our system. Are we moving forward or backward? The figures indicate that in many areas we are slipping backward.

Buried under a pile of papers I found this response by Dr Gilbert to a request by Dr Blake Waterhouse, CEO of Straub Clinic & Hospital. It was written by Fred in 1991 in his broad-stroked and nearly indecipherable longhand, asking questions for us all to answer:

Suggestions for 1992 Service and Cost Improvements

Fred I. Gilbert, Jr, MD

Blake: We are deafened by cries for reform and restructuring of the manner in which medicine is practiced. From rich and poor, radicals and conservatives, big business and small business. Unfortunately, they are more right than wrong. Our system at Straub like most everywhere is upside-down. We need more primary care physicians (and nurse practitioners), fewer specialists, better integration and continuity of care—in short, a greatly revamped, more rational (capitation) system of health care. We need to think about it, talk about it, write about it, and most of all, *do it!*

What is the best way to reconsider, broadly, how to improve the process, cost, and outcome of patient care? One way is to sit down with a modern-day Osler who has the skill, scope, humanness, thoughtfulness, and knowledge of the best of the general internists, but who also understands and is willing to re-examine new organization, methods, and technology without being bound to the past.

Priorities for the next decade will be to contain costs, increase quality, involve patients in the decision, put new technology in its proper place, increase efficiency—all the while maintaining or improving personal relationships with our patients, the final common pathway.

General internists.—Two-thirds say they cannot see any more patients.

Do we care for the patients we see in the best way?

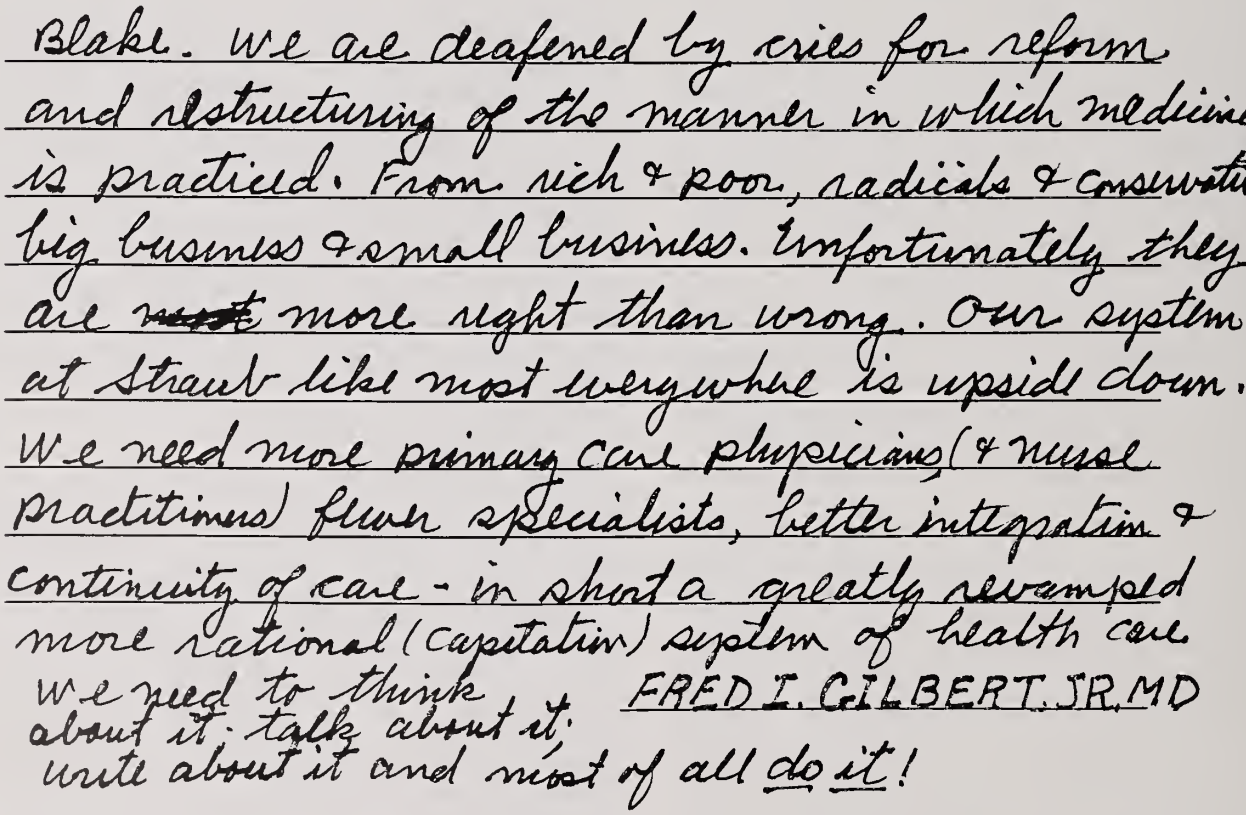
How about the care of those who do not come to see us?

Should there be a reorganization of the tasks now done by the general internist? Is he or she trying to do too much? or too little by referring too many patients?

Health care personnel.—Are we using them sufficiently? efficiently?

Could a nurse practitioner (under the guidance of a physician and with the help of a computer) do periodic examinations, provide periodic review and updates of needs (Pap tests, prostate, immunization, pneumovax)?

Could a trained colonoscopist do routine and F/U colon exams?



Could a trained nurse practitioner run specialty clinics for family planning, gout, cardiac rehabilitation, diabetes, hypertension?

When internists are too busy, are they doing the wrong things?

Is the internist freed up to do the things he or she is most uniquely trained for and capable of?

Should the same physician be expert at ICU and periodic examinations?

What should medical schools train an internist to be?

Does the responsibility of the medical school include consideration of innovative ways to deliver health care with different classes of personnel, or does it stop at training a *good internist*?

Research.—Bench, clinical, outcomes should be part of large, expensive, randomized, double-blind crossover studies?

Should every physician be doing continual research, daily? What kind?

How much training in epidemiology and statistics is needed?

What is the function of the medical school in fostering it?

Who pays for it? Should it be part of every practice?

Medical records.—Are POMRs sufficient?

Should the record be entirely electronic within a decade or so?

Should every medical student be required to have and use a computer?

Should it be possible to monitor the mix, cost, process, and outcome of every patient of every doctor, with instant peer-review and inter-physician comparison for single patients and groups of patients?

Would that be good or bad, frightening or reassuring?

"Everything is changed except the way we think."
(Einstein at the dropping of the atomic bomb)



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The Pursuit of Excellence

Fred I. Gilbert, Jr, MD

Read at a meeting of the Straub Clinic physicians in 1962
and published in *Group Practice* 1962: 429-430.

For slightly over a decade, I have practiced medicine in the Territory and now State of Hawaii. Almost all of this time has been spent here at the Straub Clinic. It is difficult for me to describe the deep personal satisfaction of working with all of you during this period. Without question, the most satisfying part of it all has been the freedom to work hard at what I wanted to do, with my efforts reinforced by you, each with your own particular skills which I could readily utilize to the advantage of our patients.

Of late, while driving between home, hospitals and clinic, I have thought how this type of medical practice might continue. There are many forces that work against it. Government and private insurance plans, which are gradually controlling the mode of practice by controlling the economics; the orientation of the hospital as the diagnostic, therapeutic and medical teaching center of the community; and the economic disadvantages that a clinic such as ours has in competing with tax-exempt private or public medical institutions, these are a few of the more obvious forces.

"The simple truth is that we must continue to acquire men and women who have the urge to excel."

I had earlier made a list of specific recommendations that I felt would assist in the growth of the clinic and medical care within Hawaii. These included a research foundation as a repository for funds earmarked for teaching and research; a diagnostic unit; a more adequate system of recording diseases diagnosed and treated here; a more active role in the teaching of medicine; and so forth.

So concerned was I in the details of the solution of these problems that I all but ignored the one answer to maintaining a healthy medical atmosphere and at the same time solving the various problems that present themselves.

The simple truth is that we must continue to acquire men and women who have the *urge to excel.*

If we do this successfully, we will always find a way to work out any problem that interferes with this driving urge. We should never, no matter how pressed, take on someone merely to get the work done. Such a person not only gets less work done but dulls the keenness of the entire group. If we are to grow in anything beyond mere numbers, we must preoccupy ourselves with this pursuit of excellence.

As new physicians have come into the clinic, some have followed in this tradition, while others have been satisfied to do a reasonably competent job with the rationalization that they are doing as well as other practitioners in the community. Unfortunately, by the time a person is adult, either this urge is there or it is not. By the time a doctor has finished his or her specialty training and started to practice, medicine has (or has not) become part religion, part a way of life, but always a vital, consuming force that he or she is interested in above all else.

We must select doctors who drive themselves to greater proficiency and consequently better care of their patients. Whether they button one or two buttons on their coats, belong to the right or wrong church, are white, black or brown—these should all be of secondary importance. If they have a true love of medicine, patients as well as physicians will never shun them; rather, they will seek them out, often over the one who has a lukewarm, halfhearted, or primarily economic interest in medicine, and who happens to belong to the proper clubs and the right church, and possesses the acceptable shade of skin color, or who puts considerable importance on being regarded as a good guy by the right people.

This urge to excel is contagious among those who possess the germ. A charged atmosphere exists where there is no such thing as an ordinary run-of-the-mill medical problem. This contagion also will infect nurses, technicians, and business personnel. Patients sense this dedication and respond with confidence and even pride in entrusting their care to such physicians.

I might say right there that I believe the economics of medicine can and should be as creatively challenging as the practice of medicine. It should be more than the necessary sending of bills, receiving and crediting the remittances. It certainly is more than merely tailoring our practices to fit a particular insurance plan or negatively protesting the appearance of each new plan. It involves imaginative economic planning and leadership so that the patient can most effectively utilize his or her physician's time and skill without undue economic hardship. The professional partners of the clinic should encourage this type of thinking among the business managers and personnel.

Our main job, then, if we wish this group to grow in dedicated excellence, is to seek out carefully the individuals whom we want. To do this we must define our needs precisely, not only within our own particular departments, but also within the group. This obviously becomes more difficult as the group increases in size.

Finally, as groups go, ours is a harmonious one. This could be explainable by our individual tolerance, warmheartedness, unselfishness and gregariousness, admixed with pious humility. However, on the other hand, I have noted distinct signs of pigheadedness in some of my partners on occasion. And I would be not in the least surprised if they had noted the same traits in me, perhaps not as often, but still there, nevertheless. I submit that there exists among people who work together to excel a certain mutual regard that is conducive to harmony. This, I believe, is the answer to what has seemed paradoxical to some. It is, I believe, why we can argue almost to the point of blows on the night of our monthly business meeting and then return to work in harmony for the rest of the month. It is next to impossible not to admire rather than belittle one's adversary of the evening before as he or she practices his or her art the next day with skill that comes from the pursuit of excellence.

Curriculum Vitae

Fred I. Gilbert, Jr, MD

Personal Statistics

Born: March 5, 1920, Newark, New Jersey

Education

1940	Junior Certificate, University of Hawaii, Honolulu, Hawaii
1942	B.S., University of California, Berkeley, California
1945	MD, Stanford University School of Medicine, Palo Alto, California
1946	Surgical Intern, Stanford University, San Francisco, California
1948-50	Resident in Medicine, V.A. Fort Miley, San Francisco, California
1960-61	Neurological Institute, University of London National Hospital, London, England
1978	Resident in Nuclear Medicine, University of California, Davis, California; Straub Clinic & Hospital, Inc., Honolulu, Hawaii

Active Military Service

1943-45	P.F.C., U.S. Army Medical Corp
1946-48	Captain, U.S. Army Medical Corp

Honors, Fellowships and Awards

1944	Alpha Omega Alpha (AOA)
1946	Diplomate, National Board of Medical Examiners (DNB)
1947-48	Special Worker, Stanford University School of Medicine (Dr Thomas Addis Renal Laboratory)
1953	Diplomate, American Board of Internal Medicine
1959	Fellow, American Association for the Advancement of Science
1962	Fellow, American College of Physicians
1971	Fellow, Royal College of Health, England
1978-95	Member, Institute of Medicine, National Academy of Sciences
1985	Distinguished Practitioner, National Academies of Practice
1987	Recipient, Hawaii Society of Internal Medicine's Recognition Award
1987	Recipient, Hawaii Medical Association's Physician of the Year Award
1988	Recipient, Milnor Professional Activities Award, The Straub Foundation
1989	Laureate, American College of Physicians, Hawaii
1991	Recipient, Award for Excellence in Research, Straub Pacific Health Foundation

Positions Held

1946-48	Co-Director, Palo Alto Physicians Clinical Laboratory, Palo Alto, California
1949-51	Clinical Instructor in Medicine, Stanford University School of Medicine, Palo Alto, California
1951-52	Assistant Clinical Professor in Medicine, Stanford University School of Medicine, Palo Alto, California
1951-53	Chief, Cardiac Clinic, Queen's Hospital, Honolulu, Hawaii
1951	Internist, Straub Clinic & Hospital, Inc., Honolulu, Hawaii
1952-53	Chief, Cardiac Clinic, St. Francis Hospital, Honolulu, Hawaii
1954-56	Lecturer, University of Hawaii School of Nursing, Honolulu, Hawaii
1954-95	Staff, Department of Medicine, Internal Medicine, Kuakini Medical Center, Honolulu, Hawaii
1955-57	Consultant in Hematology, St. Francis Hospital, Honolulu, Hawaii
1956-58	Director, Territorial Alcoholism Clinic, Honolulu, Hawaii
1957-59	Medical Advisory Committee on Intern and Resident Program, St. Francis Hospital, Honolulu, Hawaii
1958-69	Medical Advisory Committee on Intern and Resident Program, Queen's Hospital, Honolulu, Hawaii
1961-64	Attending Staff, Neurology, Queen's Hospital, Honolulu, Hawaii
1961-65	Lecturer in Medicine, University of Hawaii, East-West Center, Honolulu, Hawaii
1963-1991	Medical Director, Straub Medical Research Institute (Name changed to Pacific Health Research Institute in 1973), Honolulu, Hawaii
1967-69	Associate Clinical Professor of Medicine, University of Hawaii, School of Medicine, Honolulu, Hawaii
1967-70	Chief of Medicine, Queen's Hospital, Honolulu, Hawaii
1969-72	Chairman, Department of Community Medicine, Straub Clinic & Hospital, Honolulu, Hawaii
1969-95	Professor of Public Health, Department of Community Medicine, Schools of Public Health & Medicine, University of Hawaii, Honolulu, Hawaii
1978-95	Nuclear Physician, Department of Nuclear Medicine, Straub Clinic & Hospital, Honolulu, Hawaii
1985-86	Acting Director, Cancer Control, Cancer Research Center, Honolulu, Hawaii
1988-90	Clinical Professor, Department of Public Health Sciences, School of Public Health, University of Hawaii
1989-95	Clinical Researcher, Cancer Research Center of Hawaii, University of Hawaii
1989-90	Consulting Medical Staff, Kuakini Geriatric Care, Inc.
1990-95	Director, Health Services Research and Policy Program, Professor, John A. Burns School of Medicine, University of Hawaii
1991-95	Principal Investigator, Pacific Health Research Institute, Honolulu, Hawaii
1993	Chief, Department of Nuclear Medicine, Straub Clinic & Hospital, Honolulu, Hawaii

Membership in Professional Organizations

1950	Hawaii Medical Association
1951-52	Diabetes Committee
1951-52	Scientific Works Committee
1951-54	Committee on Chronic Illness
1952-53	Chairman, Scentific Works Committee
1953-54	Health Education Committee
1953-55	Postgraduate Committee
1954-64	Editorial Board, HMA Journal
1954-55	Chairman, Committee on Chronic Illness
1955-56	Chairman, Committee on Tuberculosis
1955-56	Scientific Program Committee
1955-69	Contributing Editor, HMA Journal
1957-58	Advisory Committee on Tuberculosis
1957-58	Ad Hoc Committee on Summer Medical Conference
1958-59	Scientific Program Committee
1958-59	Chairman, Committee on Tuberculosis
1963-64	Medical Education Committee
1965-66	Chairman, Scientific Program Committee
1966-68	Scientific Program Committee
1968-70	Public Relations Committee
1969-70	Heart Committee
1970-71	Hospital Committee
1970-71	Public Relations
1971-73	Health Manpower Committee
1973-75	Commissioner, Health Affairs
1973-74	Chairman, Committee on Health Service and Care
1977-95	Cancer Committee
1950	American Medical Association
1952	American Association for the Advancement of Science
	American Association of Medical Clinics
1952	Member, Prepaid Medical Care Committee
1953-95	Honolulu County Medical Society
1953	Alternate Delegate to the HMA
1953	Postgraduate Committee
1954	Alternate Delegate to the HMA
1954	Postgraduate Committee
1955-56	Delegate to the HMA
1956-57	Medical Practice Committee
1953-95	American College of Physicians
1957-95	Hawaii Society of Internal Medicine
1959	American Society of Internal Medicine
1959	Hawaii Heart Association
1959	President
1965-66	Board
1966	Community Service Committee
1971	Chairman, Health Technology Committee
1960	Hawaii Academy of Science
	President
1960	Hawaii Association of Medical Clinics
1960-95	Society of Nuclear Medicine
1971-72	Chairman, Committee on Delivery of Medical Services
1973-74	President
1975	Board
1961	American Therapeutic Society
1971	Hawaii Experimental Medical Care Review Organization (EMCRO)
1973-75	Health and Community Services Council
1974-75	Delegate to HMA
1971-95	International Health Evaluation Association, Founding Member
1971-72	President
1971-74	Board
1980	American College of Nuclear Physicians Delegate
1981-83	President, Hawaii Chapter
1992	Royal Society of Medicine, Clinical Division
	Associate Member

Service Contributions

1950	Founder, Pleasant Hills Medical Center, Concord, California
1951-59	Examiner, National Board of Medical Examiners
1952-66	Member, Board of Directors, Oahu Tuberculosis and Health Association, Mental Health Association, Maunalani Hospital, Governor's and Mayor's Advisory committee
1953	Chairman, Health Education Committee, Oahu Health Council, Honolulu, Hawaii
1955	Chairman, Health Exhibit for Oahu Health Council, Territorial Fair
1956-58	Board of Directors, Hawaii Committee on Alcoholism
1956-58	Director, Territorial Alcoholism clinic
1958	Chairman, Case Detection Program, Tuberculosis Association
1964-68	Chairman, Health Maintenance Section, Governor's Commission on Aging
1966-70	Executive Committee and Board of Directors, Hawaii Heart Association
1966	Chairman, Minimum Standards for Cardiovascular Clinics of Hawaii
1966-71	Chairman, Hawaii Medical Library Committee
1971-75	Member of the Editorial Board, *Clinical Engineering*

1973-78 Member, Board of Governors, Hawaii Medical Library
1974-95 Member, American Cancer Society Task Force on Breast Cancer
1975-78 Chairman, Straub Clinic & Hospital Committee on Quality of Medical Care
1975 Member, American Cancer Society Task Force on Colon-Rectum Cancer
1975-77 Co-Director of Cancer Control, Cancer Center of Hawaii
1975-77 Member, American Cancer Society Technical sub-Committee on Breast Cancer
1978-95 Member, Straub Clinic & Hospital Committee on Radiation
1980-95 Member, Breast Cancer Detection Demonstration Project Data Management and Advisory Group, NCI
1981-95 Member, State Health Planning Development Agency, Diagnostic Imaging Technical Advisory Committee
1982-85 Member, Diagnostic & Therapeutic Technology Assessment Committee, American Medical Association Council on Scientific Affairs
1985-95 Chairman, Breast Cancer Task Force, Hawaii Pacific Division, American Cancer Society
1986-95 Member, AIDS Research Committee
1985-86 Member, Council, American College of Physicians
1986 American College of Physicians Special Fall Session Molokai - November 8 and 9, "The Profession in Turbulent Times" - Speaker
1989 Member, Hawaii Medical Association Native Hawaiian Ad Hoc Committee
1989-95 DATTA Panel Member, American Medical Association's Division of Health Care Technology
1990-95 Editorial Review Board, Archives of Environmental Contamination and Toxicology
1992-95 Member, Board of Directors, Friends of the Cancer Center
1992-95 Member, Research Committee, Kaiser Permanente Hospital

Research Activities (Since 1967)

1967-75 NHLI, *Cooperative Study of Drugs & Coronary Heart Disease*, (NHLI Grant #HLII458), Principal Investigator
1968-71 NIH *Periodic Examination of the Apparently Well Individual*, (NIH Grant #99021), Principal Investigator
1969-70 Riker *Clinical Pharmacology Unit*, Principal Investigator
1970-73 Medidata *Diagnostic Assist Program*, Director
1971-73 HSMHA, *Use of Allied Health Personnel in Management of Chronic Diseases*, (HSMHA Contract #HSMII0-71-162), Project Director
1972 C. Brewer *Investigation of Various Alternatives to Provide Medical Care to Hilo Coast Plantations*, Principal Investigator
1973-79 NCI, *Breast Cancer Detection Demonstration Project*, (NCI/ACS Contract #NOI-CN-45046), Project Director
1975-78 Dept. of Health, State of HI *Breast Cancer Detection Demonstration Project*, Principal Investigator
1975 C. Brewer, *Kau Health Services Study*, Principal Investigator
1975 NCI, *Planning for a Cervical Cancer Screening Program*, (NCI Contract #NC1- CN055156-03). Co-Principal Investigator
1975 NCI, *Community Based Cancer Control Program*, (NCI Contract #NO1-CN-55267), Director of Technical Services
1979 NCI, *Kauai Breast Cancer Screening Project*, (NCI Contract #NO1-CN-75399), Consultant
1979 *Osteoporosis Project* funded by the Upjohn Company, Principal Investigator
1979-82 *25-HCC for the Prophylaxis of Post-Menopausal Osteoporosis* funded by The Upjohn Company, Principal Investigator
1980-85 NCI, *Long Term Follow-up of the Hawaii BCDDP Participants*, Principal Investigator
1980 Virginia Mason Research Center, *Predictive Value of Wolfe Classification in BCDDP*, Principal Investigator
1980 *Waimea Dispensary, Inc., Planning of Outpatient Facilities* Adjacent to Kauai Veterans Hospital, Consultant
1981-83 American Wood Preservers Institute, *Effects of Chemical Preservatives on the Health of Wood Treating Workers in Hawaii, 1981*: Clinical and Chemical Profiles and Historical Prospective Study, July, 1983. Principal Investigator
1982-84 ACS Grant, *A Biostatistical Analysis of Breast Cancer & Benign Breast Disease Data From Four BCDDP Programs*, Project Director
1982-84 EBI Grant, *PEMF Application in Osteoporotic Elderly Women*, Co-Principal Investigator
1983 Sclavo, Inc. Grant, *Assay Phase of the Study of Sclavo Liquid Purified Protein Derivative (PPD) Tuberculin, Principal Investigator*
1983-86 Straub Trust, *Optimum Treatment Dose of I-131 in Hyperthyroidism and Subacute Thyroiditis: Its Manifestations and Clinical Course*, Co-Principal Investigator
1983-85 Straub Trust, *Screening Mammography*, Reasons for Under-Utilization, Principal Investigator
1984-91 NHLBI, *Systolic Hypertension in the Elderly Program*, (NIH Contract #NO1-HV-48064), Co-Investigator.
1984 *Blood Pressure in Survivors of Myocardial Infarction*, The Coronary Drug Project Research Group, Principal Investigator
1985 Sclavo, Inc. Grant, Verifications Phase of the Study of Sclavo Liquid *Purified Protein Derivative (PPD) Tuberculin*, Principal Investigator
1985-95 SCHI Nuclear Medicine, Data Analysis in Nuclear Medicine, Principal Investigator
1985-86 Cancer Research Center of HI and Pacific Foundation for Cancer Research, *Study of Possible Causes of Ethnic Differences in Cancer (1) Waianae Coast Comprehensive Health Center (2) Kaiser Maili Clinic*, Principal Investigator
1986-95 Straub Trust, *Bone Loss in the Elderly*, Co-Principal Investigator
1987-95 Straub Trust, *Critical Decision Points in Evaluation and Management of Patients for Presence of Significant Coronary Artery Disease*, Co-Principal Investigator
1987-1992 Straub Foundation, *Comparison of Thyroid Function Tests*, Co-Principal Investigator
1987-91 Straub Trust, *Evaluation of a Model System for Coronary Risk Screening - Heartbeat*, Co-Principal Investigator
1987-90 Discretionary Fund, *The Influence of Variations in Medical Practice on the Cost and Quality of Patient Outcomes*, Principal Investigator
1988-89 Sclavo, Inc., *Two Year Stability Study of Sclavo Liquid Tuberculin Purified Protein Derivative (PPD)*, Principal Investigator
1989-90 Sclavo, Inc., *Sclavo PPDS2 Phase I and II*, Principal Investigator
1989-92 Straub Trust, *Who is the Primary Care Physician and What Are His/Her Responsibilities?*, Principal Investigator
1989-90 Research Corp. of the University of Hawaii, *Development of a Directory of Adolescent Health Data Sets (DOH Adolescent)*, Principal Investigator
1990-95 Black Memorial Trust, *Improving the Quality of Hospital Care Through the Formation of a Statewide Hospital Consortium*, Principal Investigator
1990 University of Kentucky Research Foundation, *Clinical Characterization of a New Standard Tuberculin Purified Protein Derivative-S2*, Principal Investigator
1990 Health Care Financing Administration *Edit of Pneumococcal Disease Initiative Data*, Principal Investigator
1991 Straub and Black Memorial Trusts, *Mechanism of Thiazide Action on Bone Metabolism*, Co-Investigator
1991 Cancer Research Center of Hawaii, *Cancer Research Consortium of Hawaii*, Co- Investigator
1991-95 Straub Trust/Black Trust, *Physician Practice Variation in the Treatment of Graves' Disease and Its Impact on the Cost and Quality of Care: A Model*, Co-Investigator
1992-95 AHCPR, *Hawaii Asian Pacific Island (HAPI) Medical Treatment Effectiveness (MEDTEP) Research Center*, Principal Investigator
1992-95 NCI, *Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial - Screening Centers*, Principal Investigator
1993-94 NCI, *Studies of Cancer Etiology and Early Markers of Disease in the PLCO Trial*, Principal Investigator
1994 State of Hawaii Department of Health, *DOH Cardiovascular/Diabetes Project*, Principal Investigator
1994-95 AHCPR, *Substance Abuse: Needs Assessment for Hawaii*, Principal Investigator

Lectures/Papers/Conferences

University of Chicago Second International Symposium on Early Disease Detection, March 17, 1971. "Modular Multiphasic Screening and Diagnostic Program Utilizing On-Line Computer".

15th Annual Scientific Assembly, The College of Family Physicians, Banff, Alberta, Canada, September 13-16, 1971. "Automated Multiphasic Health Testing".

Washington/Alaska RMP Joint Conference of International Health Evaluation Association on Critical Analysis of the Cost-Effectiveness of Multiphasic Screening, Seattle, Washington, October 1-2 1971. "The Use of Allied Health Personnel in Automated Multiphasic Health Testing".

American Society of Internal Medicine Health Care Technology Committee Meeting, Atlanta, Georgia, October 19-23, 1971. "Report on Intersociety Committee for Multiphasic Health Screening".

International Health Evaluation Association Meeting — Tutorial on Multitesting, December 3-4, 1971, Washington, D.C. Presiding.

Fifth Hawaii Conference on System Sciences, University of Hawaii, Honolulu, January 11-13, 1972. "Hawaiian Approach to Health Maintenance Organizations".

101st Annual Session of the California Medical Association, San Fancisco, California, February 12-16, 1972. "Hawaiian Approach to Health Maintenance Organizations".

Fifth World Conference on General Practice, Melbourne, Australia, October 1-7, 1972. "Data Collected by Nurses and Allied Health Personnel".

Seventh Annual Meeting of the Association for the Adavancement of Medical Instrumentation, Las Vegas, Nevada, April 24-26, 1972. "Multiphasic Health Testing".

National Conference on Cancer Prevention and Detection, Bethesda, Maryland, March 28-29, 1973. "Allied Health Personnel in Cancer Detection: Utilization of Proctosigmoidscopic Technicians in the Detection of Abnormalities of the Lower Bowel".

Advances in Primary Care, Hawaii Conference, February 16-23, 1974. "The Straub Experience with Automated Multiphasic Health Testing".

Annual Meeting of the Western Conference of Prepaid Medical Services Plans, Maui, Hawaii, November, 1974. "Today's Answers to Yesterdays Problems".

Cancer Epidemiology Seminar, University of Hawaii, November 11, 1974.

Hawaii Medical Association, January 10, 1975, "Breast Cancer Demonstration and Detection Project".

University of Hawaii School of Public Health Conference, Ilikai Hotel, Honolulu, January 13, 1975.

Advances in Primary Care Conference, Honolulu, February 1975. "Experience with Protocols at the Straub Clinic and Hospital".

Hospital Association of Hawaii Meeting, October 9, 1975. "A Patient's Bill of Rights: Towards a New Reality in Patient/Institution Relations".

Pacific Coast Health Association Meeting, Honolulu, November 26, 1975. "Breast Cancer".

American Medical Association Clinical Meeting, Honolulu, December 3, 1975. "Early Detection and Treatment of Breast Cancer: State of the Art".

Preceptorship Conference, University of Hawaii School of Medicine, Ala Moana Hotel, Honolulu, December 1975.

MCSA Conference on The Changing Health Care Team-Improving Effectiveness in Patient Care, Kauai, Hawaii, February 1976. "Share-Care Clinics" (with Dr Robert A. Nordyke).

Media Conference on Cancer, Honolulu, April 26, 1976. "Breast Cancer Project and Implications of Cancer".

ACS Cancer Conference, Honolulu, May 4, 1976. "Breast Cancer Project".

South Pacific Cancer Commission, Honolulu, June 1976. "Detection and Prevention of Breast Cancer".

University of Hawaii School of Public Health-Pepperdine University Conference, Honolulu, July 14, 1976. "Computers in Health Care".

IHEA Conference, Kyoto, Japan, November 1976. "AMHTS: Past, Present and Future".

American Cancer Society Workshop, Honolulu, March 25, 1977. "Breast Cancer".

BCDDP Project Directors & Coordinators Meeting, Washington, D.C., April 1977. "Screening for Breast Cancer in Hawaii: Review of the First 100 Cases".

American Cancer Society Workshop, Honolulu, April 2, 1977. "Screening for Breast Cancer".

KHET Educational Television, Honolulu, November 11, 1977. "Breast Cancer".

Stockholm, Sweden, June, 1979. Speaker, "Early Diagnosis of Breast Cancer."

Osteoporosis Conference, Honolulu, Hawaii, May 13, 1980. "Evaluation, Prevention, Treatment".

American College of Physicians' Annual Meeting, Honolulu, Hawaii, February 6, 1980. "Diagnosis of Asymptomatic Carcinoma of the Breast — A Comparison as to Cost and Efficacy."

Maui County Medical Society & Maui Memorial Hospital, Oncology Symposium, Wailea, Maui, Hawaii, January 16 & 17, 1982. "Recent Advances in the Diagnosis of Oncologic Disease."

American College of Physicians & Hawaii Society of Internal Medicine, Hawaii Regional Meeting, Honolulu, Hawaii, February 4 & 5, 1982. "Coronary Spasm Diagnosed by Thallium Radionuclide Scanning of the Heart".

American Cancer Society Windward Oncology Conference, Honolulu, Hawaii, Feb. 9, 1982. "Early Detection of Breast Cancer".

American Medical Informatics Association (AMIA) Congress 82, San Francisco, California, May 2-5, 1982. "Semi-Automated Reporting System for a Nuclear Medicine Department".

Aspen Institute Executive Seminar, Punalu'a Hawaii, February 15-25, 1984, Invited Participant.

Society of Nuclear Medicine, Western Regional Chapters, Wailea, Kihei, Hawaii, April 12-17, 1985, "Medical Computers, Present and Future."

American Association for Medical Systems and Informatics (AAMSI) Congress 85, San Francisco, California, May 20-22, 1985. "A Computer Assisted Hospital and Outpatient Information System for Patients Served by a Multispecialty Group Practice".

Alaska Hawaii Seminar, sponsored by Pacific Health Research Institute/Hawaii Medical Association, Waterfall, Prince of Wales Island, Alaska, July 20-25, 1985. "The Restructuring of Medicine".

American Medical Directors Association, Honolulu, Hawaii, October 13, 1985. "The Appropriate Use of Technology in Medical Problems of the Elderly."

IMIA Workshop Kobe, Japan. April 8-10, 1986. "Management of Outpatients with Defined Chronic Diseases".

AAMSI Congress 1986, Anaheim, California, May 7-10, 1986. "Towards More Rational Management of Significant Abnormalities Discovered on AMHT".

Medinfo '86, Washington, D.C., October 1986. "Learning From Your Own Practice with Computer Assistance."

American College of Physicians Special Fall Session, November 8 and 9, 1986, Molokai -"The Profession in Turbulent Times" - Speaker

The Fourth Annual Meeting of the International Society of Technology Assessment in Health Care, June 10-11, 1988, Harvard School of Public Health, Boston, Massachusetts (co-author) "Joint Venture Acquisition of Expensive Medical Technology by Oahu Hospitals; Planning, Operations and Impact of Lithotripsy and Magnetic Resonance Imaging"

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American College of Physicians, Hawaii Fall Meeting, November 1, 2, and 3, 1991, Maui Marriott Hotel, Kaanapali, Maui. The Physician Patient: Caring for Ourselves, Our Colleagues and Their Families. "Confronting the Incurable", Speaker.

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HMA Council Highlights

May 5, 1995
Roger T. Kimura MD

The HMA Council meeting was called to order by President Frederick C. Holschuh MD at 5:45 pm.

Present were C. Lehman, President-elect, R. Kimura, Secretary, J. Spangler, Treasurer, A. Don, Immediate Past President; AMA Delegates R. Stodd, A. Kunimoto; Speaker of the House L. Howard; Vice Speaker H.K.W. Chinn; Component Society Presidents: D. Canete of Honolulu, E. Bade of Hawaii, Councilors T. Au, P. Chinn, R. Hollison, S. Hundahl, M. Shirasu, K. Thorburn, J. Betwee, B. Shitamoto, C. Kadooka, A. Bairos; Past Presidents W. Dang, G. Goto, J. McDonnell, S. Wallach; HMA Alliance President L. Nishi; Medical student delegate to the AMA S. Chang.

HMA Staff: J. Asato, J. Estioko, N. Jones, P. Kawamoto, L. Tong, J. Won, and A. Rogness, recording secretary.

• Drs Norman Goldstein, *Hawaii Medical Journal* editor, and S.Y. Tan, guest editor for the April issue of the HMJ on Medicine, Law and Bioethics were applauded for their work on a fine issue of which the HMA can be very proud. HMJ staff were thanked for their hard work in putting this fine *Journal* together.

• Dr Holschuh reported that Drs Steve Wallach and Jack Lewin were roasters from the HMA when Marvin Hall was roasted during the Distinguished Medical Reporting Awards Banquet. More than 200 people attended the fun-filled event, with Billy Sage serving as the emcee. Dr Holschuh said that he had received a letter from Marvin Hall thanking HMA for a wonderful evening.

The Long Range Planning Committee had its initial meeting to review the recommendations and referrals charged to the committee from the last annual meeting.

Morning breakfast meetings have been reactivated under the charge of the HMA. Representatives from HMSA, Kaiser, the Nurses' Association, Health Care Association, HMA, and the Hawaii director of health are invited to attend.

• Mrs Lillian Nishi, HMA Alliance President, reported that the HMAA took out a two-page ad for Doctors' Day and met with Governor Cayetano and Mayor Harris for the Proclamation of Doctors' Day. First-aid kits were distributed at the Legislature. Mrs Nishi asked HMA physicians to become more active in the legislative process next year. She pointed out that HMA physicians need a unified voice if they want to be heard and make an impact on the issues.

For Action

1) A motion was passed that 50% of the shares of the Independent Physician Network, Inc be sold to PMAG for the express intent of beginning discussions, with the option of buying back the shares at a predetermined price should the negotiations fail.

2) A motion was passed to support the Pennsylvania resolution to the AMA and adopt Dr Kam's resolution to be introduced by the Hawaii Delegation at the AMA meeting in June. The resolutions recommend that the AMA assist all states with the issues of independent nurse practices by collecting the report data from each state and disseminating to all states.

3) A motion was passed that the HMA fund $1 per HMA member (approximately $1,853) for the joint venture of the AMA/State Medical Society Litigation Center.

4) A motion was passed that the HMA support the Medical Student Section resolution and it be included in the appropriate Medical Student Section at the AMA meeting in June. The resolution would include Native Hawaiians in the Association of American Medical Colleges category of underrepresented minorities.

5) Council approved the Membership Benefits Committee's recommendations (1) To contract with the Waikiki Gallery for art shows; (2) to hold the following seminars: "Financial Planning and Asset Protection Strategies Under the New Tax Law" and "Tax-free Investing."

6) A motion was passed that letters be sent asking for a veto of the workers' compensation and no-fault legislation.

7) A motion was passed that the HMA place a one-eighth page ad for $475 in the *Tripler Army Medical Center Directory and Guide*.

8) A motion was passed to support the Hawaii Health Information Corp (HHIC) with a pledge of $5000 this year and to support the appointment of Sharon Vitousek MD as HHIC medical director.

9) Tom Trannel MD was approved as HMA Resident Physician Delegate at the AMA meeting. Dr Trannel won a Burroughs Wellcome leadership award that provides the total cost of the meeting.

Component Society Reports

West Hawaii.—Dr Bairos reported that Neighbor Island physicians cannot always use the HMA membership benefits and believes that if HMA would discount dues for these physicians, HMA membership would increase. The Long Range Planning Committee will discuss the issue.

Hawaii.—Dr Bade reported the last county meeting was held on April 24 and a consultant from the Mainland spoke about managed care and capitation. Dr Bade said he is dismayed to see how many delinquent dues payments there are from Hilo and he will make an effort to contact physicians.

Maui.—Dr Shitamoto reported that Dr Schlesinger and his wife will talk to the county society on May 11 about the HMA Committee on Physicians' Health. Dr Holschuh will visit Maui in the future.

Honolulu.—Dr Canete reported that the HCMS board met with Bob Hiam and Bob Nichols of HMSA. They discussed the future of medicine; how the practice of medicine is likely to change, and who will be peer reviewing doctors. Dr Canete said he had offered the peer review services of the HMA.

Although the Vision 2000 legislation did not pass, the meeting will be scheduled for September 8 and 9. On May 12 there will be a meeting to discuss whether Vision 2000 will proceed in a privatized form. The corporations might not support this project any more.

For Information

Smoke Free HMA Building.—A response letter from the managing agent of the HMA Development Company was distributed at the meeting. The HMA Development Board will meet to discuss the issue and will send a follow-up letter to Council. Dr John McDonnell was satisfied to see that the issue is being studied.

Managed Care Educational Session.—Dr Kimura reported that it was not possible for a representative from the AMA to attend a meeting in May. The earliest would be July.

The meeting was adjourned at 9:30 pm.

"Our moral responsibility is not to stop the future, but to shape it . . . to channel our destiny in humane directions and to ease the trauma of transition."

These words by noted futurist Alvin Toffler aptly describe the life of Dr. Fred I. Gilbert, Jr. His decades of service to his fellow man and his chosen profession are certainly worthy of celebration. The men and women of Queen's -- physicians and staff alike -- are proud to join his family and peers in honoring Dr. Gilbert's lifelong commitment to advancing medical care for the people of Hawaii.



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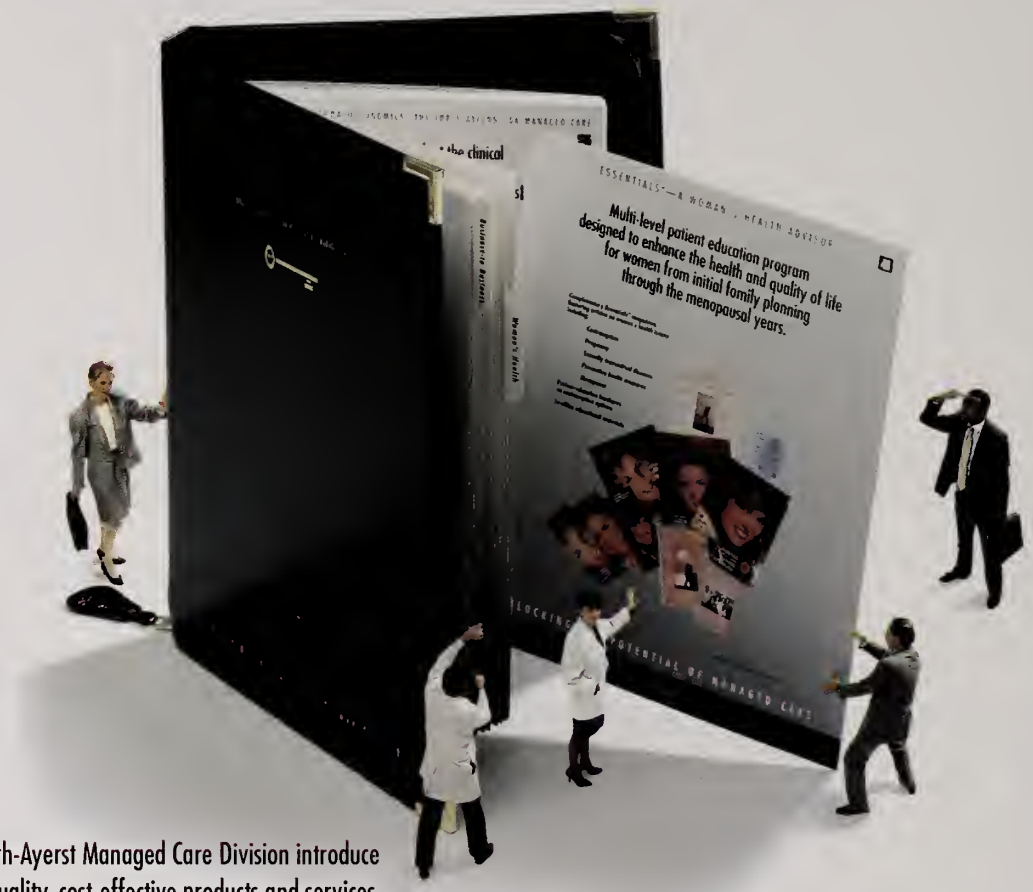
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About the Cover

Tripler Army Medical Center is celebrating its 75th Anniversary of providing military medicine in the Pacific. But despite all of its far-reaching and innovative medical skills, the members of the community and patients look at each other meaningfully and ask, "Why is it pink?"

According to one official at Tripler AMC, it's not really pink—it's *rose coral*.

Was it painted pink during World War II to protect it from enemy bombing? No, say Tripler officials, it wasn't painted until after the war.

Hawaii architect Robert O. Thompson, who planned the landscaping for the Royal Hawaiian Hotel—pink Moorish design—also landscaped Tripler. But there is no evidence that Thompson made the decision to paint the building pink.

Another theory is that the hospital was to be painted blue, but a soldier in charge of ordering supplies got the wrong federal stock number. When Tripler received 30 million gallons of pink paint that couldn't be returned, it was decided the hospital would be pink until the paint ran out. There is no proof that this story is valid.

Maybe there was no paint at all. The building was constructed from a mixture of mortar and crushed coral. By mixing white mortar with crushed coral and red dirt from Moanalua Ridge, pink is created. Could the mystery be solved this easily? Did someone simply match the paint to the color of the mortar?

An old issue of the *Caducean* quotes, "The color pink was selected due to the use of stucco, the tropical environment, the setting of the hospital, and the overall landscaping plans."

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Editorial

Norman Goldstein MD

This special issue of the *Hawaii Medical Journal* is dedicated to Hawaii's senior Senator Daniel K. Inouye, a longtime advocate of military medicine. Despite recent federal financial cutbacks, a military medical research building will be built on the grounds of the Walter Reed Army Medical Center in Washington DC. The $148-million complex will provide facilities for the study of infectious diseases and other military medical projects and will be named in honor of Senator Dan Inouye.

Senator Daniel Inouye was also instrumental in securing the $18-million funding for the Spark Matsunaga Veteran's Medical Center in Honolulu.

We have long needed this VA Hospital in Hawaii, where there is the highest proportion of veterans in the nation, but no veteran's hospital, forcing many vets to the Mainland for continued medical care. Today Hawaii is one of only two states without a VA Hospital. Thanks again to Senator Inouye, the veterans in Hawaii will be able to be treated in their own state.

Mahalo to Senator Dan—a very special son of Hawaii—and his hardworking staff members in Washington and at home in Hawaii *nei*.

Dedication

In 1991 America commemorated the 50th Anniversary of the Japanese attack on Pearl Harbor.

On December 7, 1941, 17-year-old Honolulu native Dan Inouye was one of the first Americans to handle civilian casualties in the Pacific war. He had taken medical aid training and was pressed into service as head of a first-aid litter team. He saw "alot of blood" and did not go home for a week.

Daniel K. Inouye was born in Honolulu, Hawaii on September 7, 1924. He attended Honolulu public schools and earned pocket money by parking cars at the old Honolulu Stadium and giving haircuts to other students.

Eighteen-year old Dan Inouye, a freshman in premedical studies at the University of Hawaii, enlisted in March 1943 in the U.S. Army's 442 Regimental Combat Team.

Sergeant Dan Inouye slogged through nearly three bloody months of the Rome-Arno campaign with the U.S. Fifth Army. Early in the action, he established himself as an outstanding patrol leader with the so-called *Go-For-Broke Regiment*, the famed rallying cry in the infantry attacks.

Inouye's unit was shifted to the French Vosges Mountains and spent two of the bloodiest weeks of the war rescuing a Texas Battalion surrounded by German forces. The rescue of *The Lost Battalion* is listed in the U.S. Army annals as one of the most significant military battles of the century. Inouye lost 10 pounds, became a platoon leader, earned a Bronze Star and a battlefield commission to second lieutenant.

Meanwhile in Italy, the 442nd was assaulting a heavily defended hill in the closing months of the war when Lt Inouye sustained an abdominal gunshot wound. He continued to lead the platoon and advanced alone against a machine gun nest that had his men pinned down. He tossed two hand grenades with devastating effect before his right arm was shattered by a German rifle grenade at close range. Inouye threw his last grenade with his left hand, attacked with a submachine gun, and was finally knocked down the hill by a bullet in the leg.

Dan Inouye spent 20 months in Army hospitals after losing his right arm. He came home a captain with a Distinguished Service Cross (the second highest award for military valor), Bronze Star, Purple Heart with cluster, and 12 other medals and citations.

After earning his Law Degree at George Washington University Law School, he returned to Hawaii where he served as a deputy public prosecutor for the city of Honolulu. He entered politics in 1954 with his election to the Territorial House of Representatives. He would later be elected to the Territorial Senate.

After Hawaii became a state on August 21, 1959, Daniel Inouye was elected to the U.S. House of Representatives as the new state's first Member of Congress. He was reelected to a full term in 1960 and was elected to the United States Senate in 1962.

Three years after U.S. Representative Inouye took the oath of office, Representative Leo O'Brien reminisced about how Inouye had arrived on the national political scene.

> Tuesday last was the third anniversary of the admission of Hawaii. Today is the third anniversary of one of the most dramatic and moving scenes ever to occur in this House.
>
> On that day, a young man, just elected to Congress from the brand-new state, walked into the well of the House and faced the late Speaker Sam Rayburn.
>
> The House was very still. It was about to witness the swearing in, not only of the first Congressman from Hawaii, but the first American of Japanese descent to serve in either House of the Congress.
>
> Raise your right hand and repeat after me, intoned Speaker Rayburn.
>
> The hush deepened as the young Congressman raised not his right hand but his left, and he repeated the oath of office.
>
> There was no right hand, Mr Speaker. It has been lost in combat by that young American soldier in World War II. Who can deny that, at the moment, a ton of prejudice slipped quietly to the floor of the House of Representatives.

During his tenure in the Senate, Senator Inouye has served as:

- Chair of the Committee on Indian Affairs, which looks into issues affecting Native Hawaiians.
- Chair of the Senate Appropriations Subcommittee on Defense.
- Chair of the Senate Commerce, Science, and Transportation Subcommittee on Communications.
- In 1987, he was appointed chair of the Senate Select Committee on Secret Military Assistance to Iran and the Nicaraguan Opposition, which held public hearings on the Iran-Contra affair from May to August of that year.

Senator Dan Inouye has served on many committees, has been active in politics for more than 35 years, and his dedication and commitment to Hawaii and America speak for themselves.

HMA President's Message

Frederick C. Holschuh MD

The Hawaii Medical Association and the physicians of Hawaii have always had a very good working relationship with our colleagues at Tripler and the other military facilities around the state. We are all indebted to the military for transferring patients by helicopter through the MAST system.

In one aspect of the military's contribution to medicine, when Diane and I were in Pohnpei State, FSM, for the charter meeting of the Pacific Basin Medical Association, one of the highlights of the meeting was a demonstration of interactive televideo conferencing over regular long distance phone systems.



Colonel Donald Person in Pohnpei, treating patients

The Tripler team was headed by Colonel Donald Person, chief of pediatrics at Tripler, and included Dr Scott Norton, Major Craig Floro, and SSG Michael Philpotts.

The demonstration showed the value of interactive televideo. The first was an excellent lecture on HIV/AIDS given by Dr Arthur Johnson, director of the AIDS clinic at Tripler. The lecture was transmitted live with interactive discussion from Honolulu to Micronesia. The second demonstration involved the video evaluation of a pediatric patient from Belau whom Dr Person had cared for previously.

The patient, her family, and her doctor in Belau were able to discuss the case via a televideo conference and show the physical findings to Dr Person and the group in Pohnpei, FSM. The technology will have tremendous value in the future for medical consultations in remote areas of the Pacific. I want to pursue discussions with Dr Norton and the other experts at Tripler and our UH John A. Burns School of Medicine on applications of this technology in our rural areas in Hawaii.

One obvious lesson learned from the experience in Micronesia is the tremendous contribution TAMC and the military physicians make to caring for Pacific Islanders.

It was a pleasure spending time with Dr Person. He is a fine gentleman and a caring, high-quality physician. I look forward to increasing the contact between HMA and our military colleagues.

A final comment: I want to mention one military physician who assisted in my pediatric training as a guest lecturer years ago at the old Kauikeolani Children's Hospital. Dr Jim Bass made an indelible impression on me and I still think of his guidance when I work up a septic child in the ER. *Aloha nui loa*, Jim.

Military Medicine

Brigadier General James E. Hastings
Commanding General
Tripler Army Medical Center



July marks the 75th anniversary of the founding of Tripler Army Medical Center. The history of the participation of military medicine in Hawaii goes back even before the turn of the century when the first U.S. troops were stationed on Oahu. Since then, there has been a close and supportive collaboration between military medicine and the civilian health care community to meet the needs of Hawaii. The military medical establishment has always had great support from the civilian community and likewise has tried to support the local community. Many prominent physicians in the community have served as consultants to the military and have contributed, always generously and often unrewarded, to the care of the patients in our hospital and to the education of our young physicians. In return, the military has tried to be a good neighbor. We have brought new technology to the community and have worked supportively with other institutions when there were shortages. Many physicians with special skills have come to the islands with the military and have stayed and contributed those skills to the civilian medical community. And of course, in times of disaster we have responded as a community member.

This issue of the *Hawaii Medical Journal* recognizes this long and mutually supportive relationship and the articles show us that the military still plays a very supportive role in the delivery of health care in the islands and in the Pacific. It is apparent that we learn from the challenges presented by the patients in this environment. Also, we are in a position to introduce new developments in health care in the state.

In a recent computer issue of the *HMJ*, we presented our early experiences with the use of telecommunications in the practice of medicine. We demonstrated that this technology could be used to improve access to care for the underserved Pacific Island residents and this could be accomplished cost-effectively. Tripler has continued this work and now has extended its connectivity to Korea, the Marshall Islands, and some ships at sea. There are plans to extend to other Department of Defense facilities in the Pacific. This initiative has included partnering with the University of Hawaii John A. Burns School of Medicine, School of Public Health, and Engineering, as well as the Veterans Administration. This story and the advantages gained have been presented to the local community and at many national forums.

The close working relationship and mutually supportive collaboration of the military and civilian health care communities in Hawaii have strengthened both groups. This recognition, based on nearly 100 years of experience, predicts continued mutual support as we all face the tremendous changes that will occur in our professional lives in the near future, and as we address the technologic, social, economic forces that we all confront. Tripler is proud to be a member of this community.

Medical School Hotline

Military Medicine and Its Impact On Medical Education In Hawaii

Thomas J. Whelan, Jr, MD, FACS, BG, MC (Ret)
Professor *Emeritus*
John A. Burns School of Medicine
University of Hawaii at Manoa

The time was January 15,1948; the speaker was Army Surgeon General Raymond Bliss. The words reflected the new professional and educational philosophy of the Army Medical Corps:

> I am sure you are well aware that professional quality is the keynote to our new orientation. We want our doctors to grow professionally. We want them to practice medicine in the Army equal to the best in civilian life. The above will be attained through post-graduate training.

In the post-World War II era, rapid demobilization of the military departments had occurred and the Army Medical Corps was decimated—only 71 board-certified specialists remained in the active duty corps. With the help of a devoted group of civilian ex-Army medical educators known after the war as the Society of Medical Consultants of World War II, and dedicated to promoting an outstanding professional environment within the medical departments of the military services, the likes of which General Bliss also envisioned, the Army residency programs were initiated in 1946. The reasons for this emphasis on residency programs were: 1) to improve the professional environment in military medicine; 2) to improve procurement of physicians for the military; 3) to increase the number of specialists so as to deliver better, high quality medical care; and 4) to improve civilian relations with the military medical field.

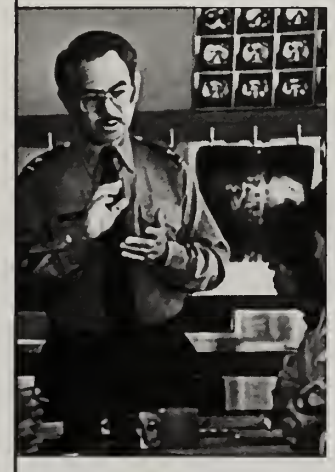
The success of these programs can be best expressed in the increasing number of graduate medical education programs and the individual numbers of residents and interns in these programs. There were 49 residency programs in 1946 with an increase to 71 by 1948. Whereas 381 residents were enrolled in these programs by July 1948, the numbers steadily increased to 1,147 by 1973 and 1,700 by the early to mid-1980s. Because of overall decreases in the Department of Defense strength, and consequently Army strength in 1992 to 1995, it became necessary to downsize the numbers in the Army residency programs to 1,200 with further decreases probable in the near future.

Internships began in 1920 following World War I in both the Army and the Navy and flourished until 1937 when they were discontinued because of lack of funding during the Great Depression. At that time there were no problems in recruitment of physicians, when civilian physician salaries were less than salaries in the Medical Corps. The Army internship was reinstituted in 1946 with the inception of the residency programs.

It became critical, particularly after 1973 when the all-volunteer military force was initiated, that although residency programs were important, medical school students would also have to be recruited to fill the residency programs. This requirement was satisfied with the opening of the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland and the establishment of the Health Professions Scholarship Program (HPSP-PL92-426). Then Secretary of Defense Melvin Laird, on January 17, 1972 placed the proper spin on the opening of USUHS when he wrote to Senator John Stennis, Chairman of the Senate Armed Services Committee:

> ...for we have concluded that one of the most important retention factors for physicians and other members of the health professions is the opportunity of functioning in a professional environment of

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the highest caliber. The proposed university would contribute measurably toward the attainment of that environment by providing academic teaching positions for military health professionals and university cooperation in establishing and monitoring training programs throughout the military departments. Ultimately, we expect that it would result in improved medical care and treatment of all beneficiaries of our health care system. I am still convinced that the establishment of such an institution will provide the professional stimulus to staunch the annual severe losses of military physicians and other health professionals that we have experienced in recent years. I personally continue to believe that it would become the cornerstone of the foundation we need to attain an all-volunteer medical force.

The school opened and remains viable, despite sidelong glances and probing studies by watchdog congressional members; and the scholarship program in civilian medical schools is fully subscribed, particularly by students attending high-tuition medical schools. Students in both programs incur a substantial *payback* obligation for service in the Medical Corps.

In general, 21% was the percentage of Medical Corps spaces allocated for internship/residency/fellowship positions. In the early to mid-1980s, with positive emphasis on the military by the Reagan administration, this percentage increased to 25% to 30% of the Corps. Currently and for the years ahead, the percentage appears to be settling down to the former 21%.

Tripler Army Medical Center quickly was incorporated into the Army-wide graduate medical education programs so that the first interns and residents were appointed to coincide with the move of the hospital from the Fort Shafter flats to the new location on Moanalua Ridge in 1948.

At Tripler, currently the existing residencies and fellowships and their years of operation are:

Family Medicine: 1974-1986; 1991-1995
Internal Medicine: 1948-1995
Pediatrics: 1957-1995
Neonatology Fellowship: early 1970-1985; 1986-1995
(as the only truly combined military-division program with Kapiolani Women's and Children's Medical Center)
Psychiatry:1978-1995
Child and Adolescent Psychiatry: 1982-1995
Obstetrics-Gynecology: 1949-1995
Orthopedics:1963-1995
Otorhinolaryngology/Head and Neck Surgery: 1978-1995
Pathology: 1958-1995
Radiology: 1973-1995
General Surgery: 1949-1995
Urology: 1949-1995
Transitional Internship: 1983-1995

This preliminary discussion is recited to establish the historical basis for the development of medical educational programs in the military, particularly the Army Medical Department, in Hawaii. It is this emphasis on education by the Army Medical Department, in general, and Army Medical Center, in particular, which influences the impact on the Hawaii medical scene and medical education here.

With the opening of the University of Hawaii John A. Burns School of Medicine in 1968, first, as a two-year school and, then, in 1973, a four-year school, a close relationship with the other formal medical educational entity at Tripler was inevitable.

This close relationship took the form of:

(1) interchange of individuals and
(2) sharing of programs.

Many physicians who were introduced to Hawaii via Tripler, upon retirement or resignation from the Army Medical Corps, remained or returned to seek a future in civilian medical education in this community. Even as we speak, the most recent individual to make this move is Brigadier General James Hastings, Commanding General of Tripler, and a fine cardiologist and Telemedicine enthusiast, who last week was selected chairman of the Department of Medicine at UH JABSOM. Many other names come to mind:

Colonel John Hardman: Chairman of Pathology, UH JABSOM
Colonel Dean Schamber: Director of Curriculum Development
Brigadier General (Ret) Thomas Whelan: Chief, Department of JABSOM
Colonel Robert Flair: Department of Pathology, Straub
Colonel James Navin: Department of Pathology, Straub
Colonel John Edwards: Vice President, Medical Staff Affairs, Queen's Medical Center



In an upcoming *Hawaii Medical Journal* article, a more complete list of military retirees who have contributed to Hawaii health care and health education will be compiled, including editor Dr Norman Goldstein.

Finally, sharing program resources, whether these be patients, faculty, or research facilities, is an outstanding example of the contribution to education by Tripler. The fact that this is a two-way street only adds to the security of the relationship. Perhaps the most secure of these relationships eventuated in 1986 when Kapiolani and Tripler, both in danger of termination of a neonatology fellowship, established a combined program with both civilian and military fellows benefiting from sharing the strong points of each. This fully integrated military-civilian fellowship is the only such program in the military and it may well be only the beginning of a trend that has been consummated in our own community.

Also in pediatrics, ever since Colonel James Bass took over as chief of pediatrics more than 20 years ago (so much for limited longevity of chiefs of programs in the Army), there has been an open-door to Tripler for UH medical students and pediatric residents. Two-thirds of the third-year class rotate through Tripler for most pediatrics.

Medical students come away excited from Tripler's Department of Medicine where the specialties of gastroenterology, nephrology, endocrinology, hematology and others, I am sure, provide patients and procedure observation for impressionable enthusiastic young students at first and second-year levels.

Tripler residents in general surgery spend very worthwhile tours at Queen's, Kaiser, Kuakini and St Francis in order to increase their operative experience; and, until about five years ago, a UH third-year resident rotated at Tripler.

In family medicine, Tripler has contributed substantially to the UH medical student program by accepting four-year students for a six-week elective and acting as one of the sites for the third-year family medicine rotation. Two students rotate for a six to eight-week period. At residency level, because the UH program has just begun, (November to December 1994) and



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Tripler's program was reinstated only in 1991, there has been little interchange as each program has struggled to get started. As each group becomes better acquainted, there undoubtedly will be more mutual participation. Each program is a three-year program with six residents at each level. The Tripler program has a panel of 8,000 patients—70% active duty patients and 30% retirees. Since the military's TRICARE managed care program does not plan care for patients over 65 years (Medicare patients), Tripler's Family Medicine Residency Program may have to coordinate with UH programs in order to satisfy its geriatrics requirements—unless exceptions to TRICARE regulations permit Medicare patients to be admitted to Tripler's panel of patients.

The only accredited animal research laboratory in the state is located in Unit G at Tripler. The chief is Colonel Harrison Hassel; Colonel Sharon Deruvo is the Nursing Research Chief. There are a number of civilian scientists in key positions in this department, the Department of Clinical Investigation (DCI). Dr John Claybaugh has worked there since 1972. Dr Sharon Uyehara, who in 1986 to 1987 had been a UH graduate student at DCI, returned, full-time, three years ago. Additionally, there is a biomedical engineer, two medical technologists, and a protocol specialist. Two to five graduate students a year (six, currently) are assigned to the laboratory; two UH nursing students a year and associate degree observers from Kapiolani Community College. Dr Claybaugh, who holds a professorship in physiology and Dr Uyehara, who is an assistant professor in pediatrics, pharmacology and physiology, are regular lecturers at UH JABSOM and provide lectures for other community health entities, such as American Heart Association, high school health fairs, and drug science research fairs. Fewer undergraduate students from Hawaii and Mainland colleges are accommodated through Dr Ken Nakamura who manages research projects for the neonatology fellowship. High school students are employed in the lab as a city and county program for underprivileged children who have an interest in science. The protocol specialist is engaged in providing guidance for Cancer Research Center of Hawaii clinical protocols involving military patients.

In conclusion, the objectives and visions of Surgeon General Raymond Bliss regarding professional quality as cited in the opening paragraph have paid off, not only for the military medical department but also for the civilian medical community of Hawaii, and the University of Hawaii John A. Burns School of Medicine.



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Historical Notes

James P. Often, MSG, USA

From A Renovated Dance Pavilion—The Progress of Army Medical Facilities in the Pacific

1898 to 1923

The first United States Army Hospital in Hawaii was on King Street in an old dance pavilion. Major General Merritt stopped in Hawaii on his way to the Philippines during the Spanish-American War with the expeditionary forces of the Eighth Army Corps. He saw the urgent necessity for a hospital in Hawaii. The



Buildings of Tripler General Hospital at Fort Shafter, circa 1938.

Independence Park Pavilion and three acres of land were leased to provide a hospital for soldiers and sailors in transit to and from Manila. General Merritt had the building renovated with assistance from the newly formed Honolulu Red Cross Society.

In 1898 the Republic of Hawaii replaced the monarchy of Queen Liliuokalani. The first U.S. troops stationed in the new Republic, the First New York Volunteer Infantry Regiment, opened the renovated dance pavilion, now a 30-bed hospital on August 15, 1898. Major Charles Edmond Davis, a surgeon with the New York Regiment became the hospital commander. Camp McKinley, now Kapiolani Park, was where encamped troops had field medical tents to support the hospital. Casualties streamed into Hawaii from combat in the Philippines. More than 21,000 troops transited Hawaii during the Philippine Insurrection. By October typhoid and malaria epidemics filled facilities. The Schaefer property in Nuuanu Valley was renovated for an additional 50 beds. Land was rented at Buena Vista Park and a 100-bed hospital was constructed; a barracks building was erected on the side of Punchbowl for convalescent patients. Patients also stayed in private homes in Honolulu.

Fort Shafter Post Hospital, the Army's first modern military hospital in

Hawaii, was opened on July 1, 1907. As the garrison increased in strength additional space for the sick was required. Three two-story wards with a capacity of 43 patients each were completed in 1913. Another three were built in August of 1915. The ward buildings could accommodate 300 patients and expand to 500 by using the lanais, which were often preferable to the inside of the buildings. A new operating pavilion was completed on August 17, 1915. The main operating room was large and well lighted both day and night. The room was equipped with surgical equipment that could compare with any operating room on the Island or the Mainland.

The clinic building was built by May 5, 1916, housing several departments of the hospital: The dispensary where all prescriptions were compounded, the attending surgeon's office, the chief of medical services office, the eye, ear, nose and throat clinic with an operating room, the laboratory, and the dental clinic. The nurses' quarters were completed in May of 1916.

The Department Hospital was changed to Tripler General Hospital on June 26, 1920, in honor of Major Charles Stuart Tripler, Surgeon, U.S. Army, who served as medical director of the Army of the Potomac during the Civil War. Major Tripler was a distinguished author who in 1858, published his celebrated manual *Examination of Recruits*. General Tripler also designed a four-wheeled ambulance wagon that was used during the Civil War that was a significant improvement in transporting the sick and wounded.

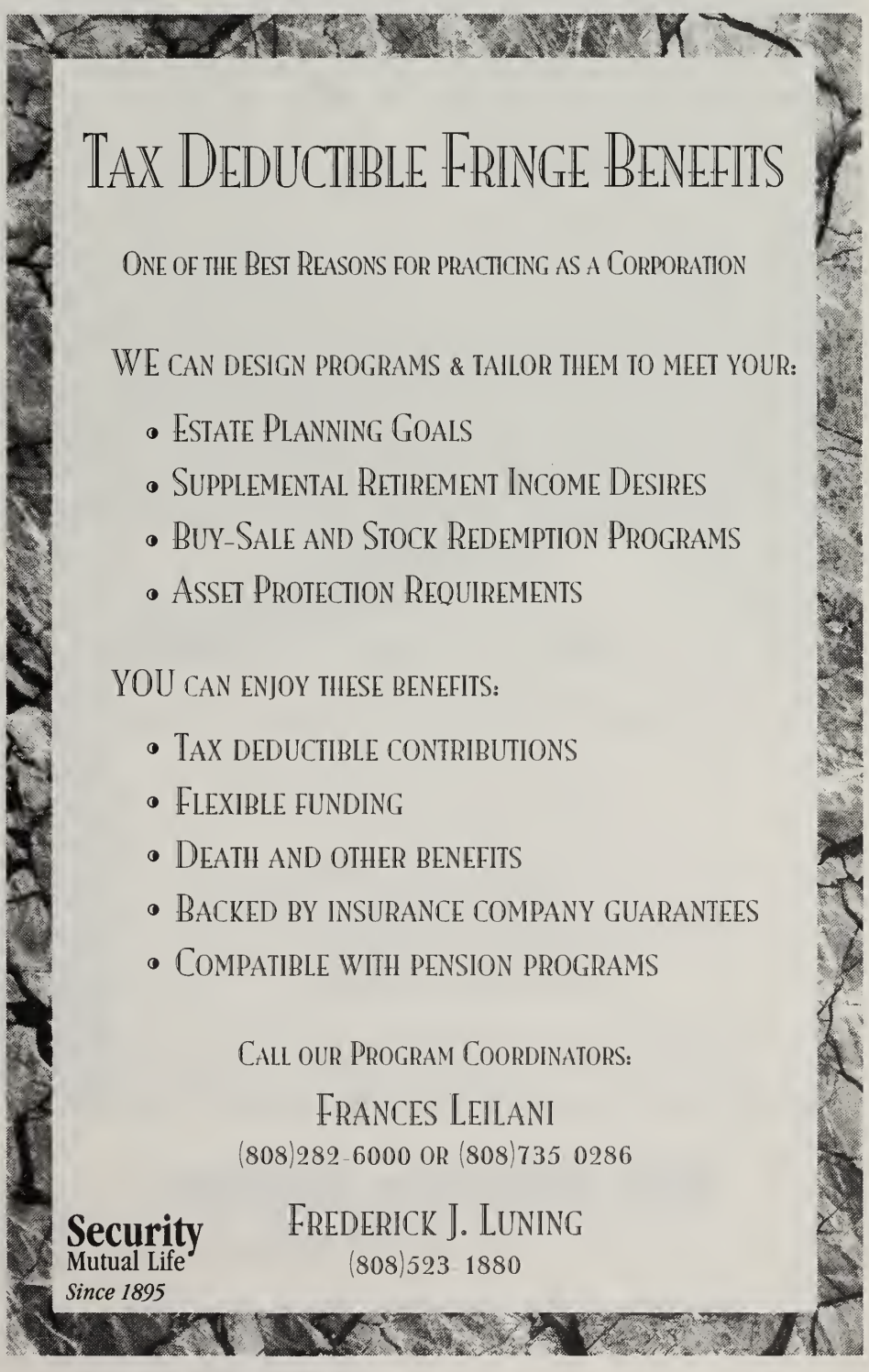
1924 to 1940

One hundred-ten babies were born at Tripler in 1925 and a total of 1,083 operations were conducted at the hospital. In 1994 at Tripler, almost 70 years later, a total of 2,963 babies were born, and 9,748 operations were performed. Between 1928 and 1930 as Tripler operated routinely, equipment was installed to upgrade the hospital: Hall surgical beds, a Wappler X-ray cystoscopic table with a new Westinghouse X-ray plant, a Victor portable electrocardiograph, Benadict Roth basal metabolic machine, a DeLee obstetrical table, a Columbus operating table and chromium-plated surgical instruments.

In 1931 the hospital authorized 20 beds for Veterans Administration beneficiaries, one-and-a-half years after President Hoover formed the Veterans Administration.

During 1940 the hospital had 28,476 admissions, 65,175 laboratory procedures, and 688,614 meals were served. All active and retired personnel and their family members residing in the City of Honolulu and vicinity were eligible for care. The number of retired personnel being cared for increased rapidly since the islands were becoming a community for retirees. The hospital consisted of 29 buildings and was staffed by 29 commissioned officers, 32 nurses, 233 enlisted personnel, and 52 civilians.

The hospital configuration was crowded—and this was during peace-time. What would happen in a war environment? Plans to increase the capacity of the hospital were submitted and construction of a new hospital on land other than that belonging to the present structure had to be considered. Expansion was completed on December 1, 1941, increasing bed capacity to 900.



War Emergency Expansion

On December 7, 1941, at approximately 7:55 am, the Japanese made a surprise air attack on the Island of Oahu. The first battle casualties arrived at the hospital by ambulance at 8:15 am. Thereafter wounded arrived in ambulances, trucks, and private cars until 11:45 am when the evacuation was completed. By noon all severely wounded cases were in shock or preoperative wards and receiving treatment. Between 8:15 and 11:45 am, 482 battle casualties passed through the hospital. A census of battle casualties in the hospital showed 138 dead, 336 in wards, and 8 in surgery at 1 p.m.

Following the bombardment, war emergency expansion was instituted which included alterations to the main hospital, the opening of Farrington High School Annex and Kamehameha Boys School Annex. Approximately a year and a half before the Japanese attack on Oahu, the City and County of Honolulu, in cooperation with Army authorities, had arranged for the use of Farrington High School as a hospital if need should arise.

On the afternoon of December 7, 1941, noninfectious medical cases were transferred from Tripler to the main building at Farrington High School. The faculty, student volunteers, and janitors of the school provided critical assistance. The cafeteria manager and workers promptly prepared and served evening meals to patients and continued to carry on for three days using food supplies of the school until Army personnel and supplies were available. Student volunteers and school janitors moved furniture and installed 324 beds. By 4:30 pm Tripler personnel had transferred 200 casualties to the school. At the time of the attack there was a 59% shortage of military medical officers. The civilian medical community provided much-needed assistance during the shortage. Throughout the war, the high school and the hospital shared facilities. Twenty-three additional buildings were constructed at Farrington High School during 1942.

Other facilities used to house patients during the war included the infirmary and Iolani Hall at Kamehameha School for Boys, the Kamehameha School for Girls, Saint Louis College, The Japanese Hospital in Honolulu, and The Territorial Hospital for the mentally ill in Kaneohe. The Army built two hospitals, each with nearly 100 buildings and 1,000 beds, on former pineapple land in Waipio and Ekahanua. On the Big Island, Army hospitals were established in school and plantation buildings. The Makawao and Waikapu Hospitals were used by the Army on Maui; Kalaheo School and buildings at Kekaha and Makaweli, on Kauai. On Molokai, the Army used the Shingle Memorial Hospital, and on Lanai, some facilities of the plantation hospital. By the end of 1944 there were 29 Army hospitals in the territory, with a capacity of about 15,000 beds. The Hospital and it's annexes were designated as the 218th General Hospital in 1944, and then as the 147th General Hospital, with one section in 1945.

Plans for the new Tripler had been drawn between 1942 and 1943. Completed in 1948, the hospital was 1.6 million square feet with 563 beds and emergency expansion capacity to 1,100 beds. The first patients were transferred from the 147th General Hospital on August 9, 1948.

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Surgical Team at Tripler, circa 1925.

Tripler General Hospital was reknowned as the tallest building in the Pacific at that time. In 1949 the Navy Medical Unit was established and a training program began with 17 residents: 14 Army and six Navy interns. This was the first graduate medical education program conducted by an Army hospital in the Islands.

1950 to 1975

The greatest test of Tripler personnel and facilities since the end of World War II was the Korean Conflict. The first of more than 60,000 Korean Conflict air evacuees arrived at Tripler in August, 1950. In April 1953 the first Korean prisoners of war were air evacuated to Tripler.



Men's ward, circa 1935.

Tripler staff witnessed the end of *Old Tripler* in 1956 after standing for half a century; Hawaii's first modern military hospital was torn down to make way for the H1 highway.

In 1975, the Department of Defense recommended a $240-million dollar renovation and new construction project to create a state-of-the-art Department of Defense health care facility for the entire Pacific Basin. The first shovelful of dirt was turned at ground-breaking ceremonies on November 3, 1981 signaling the beginning of the construction of three additional wings to Tripler. On June 5, 1985, the new wings were dedicated with a traditional Hawaiian blessing and added 433,000 square feet of space to the hospital, making Tripler the second largest medical center in the Army.

The contract for Hawaii's first VA medical center was awarded in 1992. The Spark Matsunaga Department of Veterans Affairs Medical Center will be located in the E-Wing of the hospital. The $185-million dollar project will include a 97-bed acute care facility, a 60-bed nursing home, an outpatient clinic and a regional benefits office located adjacent to or connected to Tripler. Ground breaking for the first new construction is scheduled for the summer of 1995.

Tripler Army Medical Center is the largest military medical treatment facility in the Pacific. It is the only Department of Defense medical center not located on the United States mainland. The role of the medical center is as unique as its geographic location. From the *Old Tripler* of 75 years ago at Fort Shafter, Tripler has become a comprehensive modern health care facility providing services to all active and retired military personnel and their dependents. The vision of Tripler becoming the *premier health care system in the Pacific Basin* is rapidly becoming a reality.



Nurse's Lounge, Tripler Hospital at Fort Shafter, circa 1923.



Camp McKinley, now Kapiolani Park, circa 1900.

Pediatric Asthma—A Correlation of Clinical Treatment and Oxygen Saturation

Thomas Cook MD, CPT* and Greg Stone MD, MAJ**

To determine the relationship between changes in room air oxygen saturation (SaO_2) and changes in the clinical signs of pediatric asthma patients after treatment with nebulized albuterol, a 9-month prospective observational study was conducted.

Eighty-two patients from 2 to 15 years of age who had exacerbations of asthma were studied when they presented to a military community hospital emergency department with an annual census of 62,500.

For each patient, the change in SaO_2 30 minutes after administration of nebulized albuterol was compared to the change in an ordinal clinical scoring system for asthma. Physicians were blinded to SaO_2 measurements. Data are reported as mean values with differences between groups analyzed using the paired t-test.

Patients with an initial SaO_2<95% who clinically improved after treatment had a mean increase in their SaO_2 of 2.6%. Patients with an initial SaO_2<95% who did not clinically improve after treatment had a mean decrease in SaO_2 of 1.1%, but this was not statistically significant (p=0.14). The positive predictive value for improved SaO_2 indicating clinical improvement is 98%. Patients with an initial SaO_2>95% did not have significant changes in SaO_2 after treatment regardless of clinical response.

For pediatric asthma patients with an initial SaO_2<95%, increased SaO_2 after treatment with inhaled albuterol is predictive of clinical improvement. Patients with an initial SaO_2<95% who do not have improved SaO_2 after treatment require further evaluation.

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Opinions and assertions contained herein are the private views of the authors and should not be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

Introduction

Several investigators have used various laboratory methods in an attempt to quantitate objectively the degree of respiratory distress of patients suffering from acute exacerbations of asthma. These studies have included measurements of FEV_1, peak-expiratory flow rates (PEFR),[1] and arterial blood gas concentrations (ABG).[2] Unfortunately, these laboratory studies are either effort-dependent or painful, and this makes their use with some patients, particularly small children, difficult if not impossible to perform.

Pulse oximetry noninvasively measures the percentage of hemoglobin bound to oxygen.[3] It has become an important tool in the evaluation of respiratory function of patients in the emergency department. For pediatric patients presenting with acute exacerbations of asthma, it can provide an objective means of evaluating a patient's degree of respiratory distress.

Some physicians use serial SaO_2 measurements during the treatment of acute exacerbations of asthma as a means of assessing the response to treatment.[4] However, different studies have reported both increasing and decreasing SaO_2 measurements in response to beta-2 agonists.[5-6] These contradictory data make the use of SaO_2 measurements to assess the response of asthmatics to albuterol a questionable practice.

The purpose of this study is to determine the relationship between changes in room air oxygen saturation (SaO_2) and changes in the clinical signs of pediatric asthma patients after treatment with inhaled albuterol.

Methods and Materials

All patients from 2 to 15 years of age who presented to the emergency department at Darnall Army Community Hospital with wheezing secondary to asthma were eligible for enrollment. Data were collected over a 9-month period. Exclusion criteria were: 1) the presence of lobar pneumonia, cardiovascular disease, foreign body aspiration, trauma, cystic fibrosis, or sepsis; or 2) severe respiratory compromise necessitating intubation before response to nebulized albuterol could be assessed. Mild respiratory infections consistent with a viral syndrome were not considered exclusionary. The study protocol was reviewed and approved by the hospital's institutional review board at Brooke Army Medical Center in San Antonio, Texas. Written informed consent was obtained from the legal guardians of study participants.

All of the patients who met our inclusion criteria had an initial SaO_2 measurement recorded by pulse oximetry (Physio-Control Lifestat 1600 Pulse Oximeter). The SaO_2 measurement recorded was the highest level observed over a 15 to 30-second period

accompanied by a correlating arterial pulse. The initial SaO_2 and all subsequent measurements were to be recorded by a nurse or medic. The physician treating the patient was blinded to these readings.

Prior to treatment each patient was examined by one of the emergency medicine residents or emergency department staff. During the initial examination the physician recorded the presence or absence of tachycardia, tachypnea, retractions, wheezing, or dyspnea. Each of these clinical signs was scored with the absence of the sign being given a score of 0, and the presence of the sign being given a score of 1 (Table 1). An overall score was generated by summing these 5 individual scores. Therefore, the patient could receive a maximum overall score of 5 (which would indicate severe symptoms) and a minimum overall score of 0 (which would indicate mild or no symptoms). Scores between 0 and 5 would indicate varying degrees of pulmonary compromise clinically observed in each patient before and after treatment. This scoring system has been used in past studies evaluating the severity of exacerbations of asthma.[7]

The patient was then given albuterol at a dosage of 0.15 mg/kg per treatment.[8] The albuterol solution was mixed with normal saline to a total of 3.5 cc to 4.0 cc. This was placed in either an Acorn II Nebulizer System or a face-mask nebulizer system (pediatric Aerosol Mask manufactured by Hudson Oxygen Therapy Sales Co) and powered by 100% oxygen at 6 L/min. The face mask system was used for younger patients who might not understand the proper use of a standard nebulizer system. The nebulizer treatments were given at approximately 20-minute intervals. Patients received up to 4 treatments or until their clinical findings had improved. At the discretion of the treating physician, patients could also receive oral or intravenous steroids during treatment in the emergency department. Prior to disposition, and at least 30 minutes after the last nebulizer treatment, the physician rescored the patient and a final SaO_2 was recorded. This time interval was used to ensure that the use of oxygen as a driving gas in the nebulizer would not affect our saturation measurements.

The mean and standard deviations for age, clinical score, and SaO_2 were calculated. The change in overall clinical score before and after treatment and the change in SaO_2 before and after treatment were analyzed using the paired t-test. The change in each clinical sign before and after treatment was analyzed by the McNemar test for correlate proportions. Effects with p-values of less than 0.05 were considered statistically significant. Standard measures of diagnostic accuracy (sensitivity, specificity, positive predictive value, negative predictive value) were calculated.

Table 1.—Clinical scoring system
Average respiratory rates and standard deviations.[12]

Clinical Parameter	Score=0	Score=1
Heart rate	> 120 beats/minute	> 120 beats/minute
Respiratory rate	> 2 standard deveations for age	> standard deviations for age
Dyspnea	Absent or mild	Moderate or severe
Accessory muscle use (retractions)	Absent or sub-costal retractions only	Intercostal and/or supraclavicular retractions
Wheezing	Absent or end expiratory only	Throughout expiration or expiratory and inspiratory

Results

Of the 82 patients entered in the study, 79 were treated by second-year or third-year emergency medicine residents or emergency department staff. The investigators (third year emergency medicine residents) treated 46 of the patients.

The mean age of the participants was 6.0+/-3.5 years. The overall score improved (ie, decreased) after treatment by a mean of 1.9+/-1.5 (Table 2). Of the 5 clinical signs scored, all improved after treatment except tachycardia (Table 3). The average SaO_2 for all patients improved (ie, increased) by 1.3+/-2.4% (Table 2).

The patients were then divided into 2 groups based on their initial SaO_2 on presentation. Patients with a pretreatment SaO_2<95% were placed in one group and those with a pretreatment SaO_2>95% were placed in the other group. Of the 54 patients whose pretreatment SaO_2<95%, 46 had an improvement in their overall score of at least 1.0 following treatment (Fig 1). The mean improvement in score for these 46 patients was 2.5+/-1.1 (Table 2). Again, all clinical signs in this group improved following treatment except tachycardia (Table 3). Of the 46 patients with an improved score, 40 showed improvement in their SaO_2 after treatment by at least 1.0% (Fig 1). The mean change in SaO_2 for all 46 patients was 2.6+/-2.1% (Table 2).

Eight patients with a pretreatment SaO_2<95% did not improve their clinical score following treatment (Fig 1). None of the clinical signs changed significantly after treatment (Table 2). As a group, the SaO_2 decreased by a mean of 1.1+/-1.9%, but this was not significant (P = 0.14) (Table 2). Of these 8 patients, only one had an improved SaO_2 after treatment (Fig 1).

For those patients with an initial SaO_2 <95%, the sensitivity and positive predictive value for improvement in SaO_2 after treatment reflecting clinical improvement were 87% and 98% respectively. The specificity and negative predictive value were 88% and 54%.

Of the 28 patients whose pretreatment SaO_2>95%, 21 had an improved overall score after treatment (Fig 2). The mean increase was 2.3+/-1.1 (Table 2). All clinical signs improved after treatment except tachycardia (Table 3). There was no change in SaO_2. Seven patients with a pretreatment SaO_2 >95% had no improvement in their overall clinical score (Fig 2). None of the clinical signs changed significantly, and there was no change in SaO_2.

Discussion

Studies investigating changes in SaO_2 shortly after initiating treatment with inhaled bronchodilators found that SaO_2 initially decreases. Tal et al recorded SaO_2 before, during, and after treatment with inhaled albuterol and intravenous aminophylline in 18 patients from 3 months to 20 years of age with acute exacerbations of asthma. The SaO_2 initially decreased after beginning treatment and returned to pretreatment levels approximately 30 minutes after the initiation of therapy. No significant increases in SaO_2 were noted at any time after treatment regardless of whether the patient was admitted or discharged.[5] In 28 adults with asthma, Hedges et al noted similar changes in SaO_2 after inhaled metaproteranol.[9] Neither study compared the change in SaO_2 with changes in clinical signs.

The initial decrease in SaO_2 after treatment with inhaled beta-2 agonists is thought to be the result of increased ventilation/

perfusion mismatching in the lungs.[5,9] Because these medications initially stimulate vasodilation of the pulmonary vascular bed, there is increased perfusion of poorly ventilated areas of the lung which decreases SaO_2. Subsequent bronchodilation increases SaO_2 and alleviates the patient's respiratory distress. The overall effect on measured SaO_2 after treatment with inhaled beta-2 agonists is an initial decrease followed by an increase as bronchospasm is reversed. The time course for SaO_2 changes from beginning of the treatment to bronchodilation and increased SaO_2 is approximately 20 to 30 minutes.[5]

Studies that measured SaO_2 20 to 30 minutes after the initiation of therapy found no significant change from pretreatment levels regardless of clinical response.[5,7,10] In 200 children with asthma who were treated with inhaled albuterol, Karem et al compared the change in SaO_2 30 minutes after treatment between patients who were admitted and discharged. Discharged patients had no improvement in SaO_2 after treatment, while those who were admitted showed a small, insignificant increase. In 43 children less than 2 years of age with wheezing-related illnesses, Bentur et al compared the change in a clinical scoring system to the change in SaO_2 30 minutes after treatment. Although the clinical score improved following treatment, the SaO_2 did not change significantly.[10]

However, Yamamoto et al in looking at a large population of pediatric patients with wheezing found statistically significant increases in SaO2 following treatment with inhaled albuterol in patients whose pretreatment SaO_2 was low. Patients with higher pretreatment SaO_2 measurements did not show significant increases in SaO_2 after treatment.[6] Changes in SaO_2 were not compared to changes in clinical signs.

In our study, patients with an initial SaO_2 of <95% were placed into one group and those with an initial SaO_2 >95% into a second group. This division is based on the non-linear relationship between oxygen tension and SaO_2. Oxygen tension can be considered to reflect the degree of hypoxemia, and thus the severity of respiratory distress. At SaO_2 levels >95%, the oxyhemoglobin dissociation curve is flat, so oxygen tension (and thus clinical signs) may change dramatically with little change in the SaO_2. For SaO_2 levels <95%, the oxyhemoglobin dissociation curve is steeper, and changes in oxygen tension and clinical signs are reflected by changes in SaO_2.[11]

We compared the change in SaO_2 after treatment with the change in a clinical scoring system used in previous studies.[7,10] This scoring system is composed of 5 clinical signs associated with exacerbations of asthma. Assessment for the presence of these signs is not dependent on patient compliance and is easily accomplished at the bedside. The usefulness of this system in predicting the need to admit pediatric patients with asthma has been validated.[9] In our study, for patients who were judged to respond to treatment, there was improvement in all clinical signs except heart rate. The absence of change in heart rate is likely due to albuterol causing either a beta-2-stimulated vasodilation and reflex tachycardia or direct beta-1 stimulation of the heart.[5] Therefore, changes in heart rate should not be used in the assessment of clinical response to treatment with nebulized albuterol, and it should be removed from clinical scoring systems evaluating the response to beta-2 agonists in the future.

The results of this study show that for children with asthma who have an initial SaO_2<95%, improvement in SaO_2 after treatment with inhaled albuterol is a strong predictor of clinical improvement (PPV=98%). Although an increase in SaO_2 of 1% is accepted as significant, of the 40 patients with improved clinical signs and SaO_2 after treatment, 33 had an increase in SaO_2 of 2% or more (82.5%), and 24 had an increase in SaO_2 of 3% or more (60%) (Fig 3). Furthermore, it is important to recall that small increases in SaO_2 on the steep portion of the oxyhemoglobin dissociation curve represent significant increases in oxygen tension and relief of hypoxemia.

For patients with an initial SaO_2<95%, the negative predictive value for lack of improvement in SaO_2 after treatment indicating no clinical improvement is low (54%). Therefore, these patients require further evaluation to determine their medical needs. Of the 13 patients in our study with an initial SaO_2<95% who did not have an improvement in SaO_2 after treatment, the clinical response to treatment and eventually disposition of these patients varied considerably. Five patients showed considerable deterioration in their clinical scores and were admitted. Eight patients were discharged home, but only 5 had improvements in their clinical scores.

Regardless of the clinical response to inhaled albuterol, patients with initial SaO_2>95% did not have significant changes in SaO_2. Lack of improved SaO_2 after treatment with inhaled

Table 2.—Clinical scores and SaO_2 before and after treatment, as well as change in clinical score and SaO_2 with calculated p-values after treatment.

	No.	Age	Before Treatment Score	Before Treatment SaO_2	After Treatment Score	After Treatment SaO_2	Change in score	P-value of Change in Score	Change in SaO_2	P-value of Change in SaO_2
All Patients	82	6.0 +/- 3.5	3.1 +/- 1.6	94.7 +/- 2.3	1.2 +/- 1.4	96.0 +/- 2.4	1.9 +/- 1.5	<.0001	1.3 +/- 2.4	<.0001
Initial SaO_2≤95% and Clinical Improvement	46	5.9 +/- 3.2	3.7 +/- 1.3	93.4 +/- 1.8	1.2 +/- 1.1	96.0 +/- 2.1	2.5 +/- 1.1	<.0001	2.6 +/- 2.1	<.0001
Initial SaO_2≤95% and No Clinical Improvement	8	7.3 +/- 2.3	2.5 +/- 2.0	94.0 +/- 2.1	2.9 +/-2.3	92.9 +/- 3.6	-0.5 +/- 0.8	0.10	-1.1 +/-1.9	0.14
Initial $Sa0_1$>95% and Clinical Improvement	21	5.3 +/- 3.8	2.9 +/-1.4	97.0 +/- 0.9	0.5 +/- 0.6	97.1 +/- 1.7	2.3 +/- 1.1	<.0001	0.2 +/-1.7	0.61
Intital SaO_2>95% and No Clinical Improvement	7	7.0 +/- 4.5	1.3 +/- 1.8	97.4 +/- 1.0	1.4 +/- 1.8	96.7 +/-1.6	-0.1 +/-.0.4	0.36	-0.7 +/- 1.3	0.18

albuterol did not indicate lack of clinical response to treatment; therefore, changes in SaO_2 after treatment for this group of patients has little utility.

Conclusion

This study demonstrates that for pediatric asthma patients with an initial SaO_2<95%, increased SaO_2 after treatment with inhaled albuterol is predictive of clinical improvement. Failure to improve SaO_2 after treatment is not predictive of lack of clinical improvement, and further evaluation is required for appropriate disposition. In patients with an initial SaO_2>95%, changes in SaO_2 after treatment with inhaled albuterol are not indicative of clinical response. An understanding of the changes in SaO_2 in pediatric asthma patients following inhaled albuterol combined with appropriate clinical evaluation can facilitate the disposition of these patients.

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Fig 1.—Plot of change in score versus change in SaO_2 after treatment with inhaled albuterol for patients with intitial SaO_2≤95%.

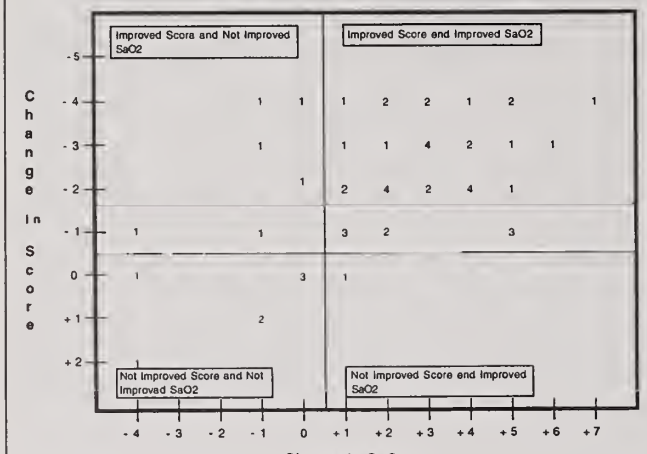


Fig 2.—Plot of change in score versus change in SaO_2 after treatment with inhaled albuterol for patients with initial SaO_2≤95%.

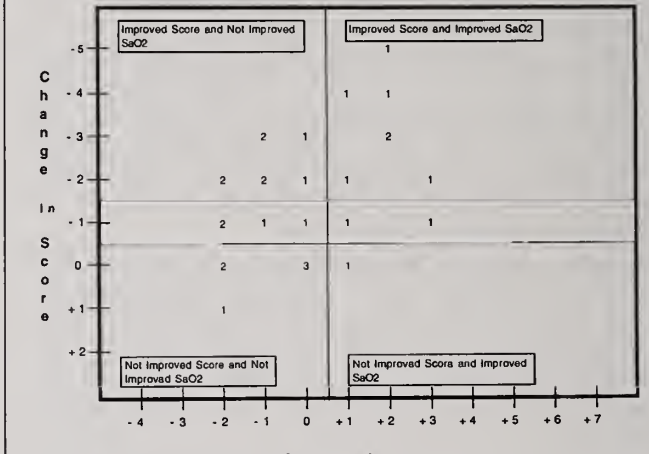


Table 3.—Percentage Change and Calculated p-values of Clinical Signs after Treatment with Inhaled Albuterol.

	No.	Change in HR	P-value of Change in HR	Change in RR	P-value of Change in RR	Change in DYS	P-value of Change in DYS	Change in RET	P-value of Change in RET	Change in WZ	P-value of Change in WZ
All Patients	82	+1%	1.00	-37%	<.0001	-44%	<.0001	-49%	<.0001	-67%	<.0001
Initial SAO_2≤95% and Clinical Improvement	46	-5%	0.75	-51%	<.0001	-54%	<.0001	-69%	<.0001	-80%	<.0001
Initial SaO_2≤95% and No Clinical Improvement	8	+58%	0.06	-13%	1.00	+12%	1.00	0%	1.00	-25%	0.50
Initial SaO_2>95% and Clinical Improvement	21	-9%	0.62	-52%	<.001	-57%	<.001	-38%	<.01	-76%	<.0001
Initial SaO_2>95% and No Clinical Improvement	7	0%	1.00	+15%	1.00	0%	1.00	0%	1.00	0%	1.00

Acute Anticholinergic Syndrome Following Ingestion of Angel's Trumpet Tea

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The Angel's Trumpet Tree, or nana honua *as it is called by Hawaiians,[1] is prized as an ornamental tree because of its large, fragrant, trumpet-shaped flowers. A young man developed an acute anticholinergic syndrome from ingesting a tea brewed from Angel's Trumpet Tree. Because the tree grows so readily in Hawaii, health care providers need to be aware of the clinical presentation and treatment of this unusual etiology of acute delirium.*

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Case History

A 19-year old man was brought to the emergency room at Tripler Army Medical Center at 11:30 am when his friends observed his confusion and repetitive cigarette-lighting behavior the morning following ingestion of tea made from a plant collected on the island of Hawaii. The plant was tentatively identified as a *Datura* species by the Poison Control Center from a verbal description of the plant after it was confiscated by the Military Police. Treatment was initiated based on this information. The plant was subsequently confirmed to be the Angel's Trumpet Tree by the University of Hawaii Botany Division.

The patient said he had consumed 12 ounces of a tea brewed from the Angel's Trumpet Tree over a 10-minute period at approximately 1:30 am on the day of admission. After 45 minutes, the patient noted emotional lability: happiness and dancing with Reggae music, anger with heavy metal music, and sadness and crying with slow dance music. He also complained of difficulty with coordination: spilling coffee, putting a cigarette to his cheek when he intended to put it into his mouth, inability to walk in a straight line; talking loudly; and having hallucinations about propeller blades. He was confused and disoriented. After several hours, he went home to sleep. He awoke at 6:30 am with headache, feeling warm and flushed,

cotton mouth, inability to focus his vision, stumbling while walking, and reaching for a cigarette that was not there. In the emergency room, he did not remember how he got to the hospital. Two other friends consumed a smaller quantity of the tea and did not report symptoms. The patient denied concurrent use of illicit drugs at the party.

The patient was given naloxone 2 mg intravenous pyelogram and 60 grams of charcoal in 60 ml of 20% sorbitol and was admitted to a telemetry ward for observation.

His past medical history was remarkable for a history of alcohol consumption, 5 drinks/week, cigarette use, 10 pack-years, and past illicit drug use: marijuana, lysergic acid diethylamide (LSD), and cocaine. His family history was positive for cancer, diabetes mellitus, and alcoholism,

On physical examination, the vital signs were blood pressure: 119/60; pulse: 50 bpm; respirations: 16; temperature: 98.4°F. He was a well-developed, well-nourished man with intermittent periods of confusion (wondering if his father had brought him to the hospital, but then realizing his father lived in Virginia and could not have done so) and restlessness (standing up anxiously several times but denying anything was wrong). His pupils were dilated at 7 mm with a sluggish constriction response to light (5 mm); mucous membranes were dry; bowel sounds were decreased; skin was dry and warm with flushing of the face and neck. The remainder of the physical examination was normal.

Blood chemistries, complete blood count, and urinalysis were normal. Blood alcohol was undetectable. Urine drug screen was negative. The EKG showed sinus bradycardia at 52 bpm.

The patient gradually improved and was discharged after 24 hours of observation. All symptoms except mild blurring of vision resolved. At discharge, the physical examination showed a pulse of 47 bpm, dilated pupils at 6 mm, and dry skin. Follow-up was arranged in the Tri-Services Alcohol Recovery Facility (TRI-SARF) and with his primary care physician.

Discussion

Due to the synthesis of atropine (*dl*-hyoscyamine) and scopolamine (*l*-hyoscine), several plant species in the genus *Datura* have long been used by humans for medicinal and hallucinogenic purposes.[2] The most well-known species in North America is *Datura stramonium* or jimsonweed. Two species are found in Hawaii, *D. arborea and D. candida,* the latter being the more common; both are known locally as the Angel's Trumpet Tree.[3]

Scopolamine is the principal active compound in all species of *Datura.*[2] The amount of scopolamine, atropine, and other minor alkaloids is similar among species. In the report published by Hall et al, the flower of *D. sauveolens,* a species included in the section *Brugmansia* with *D. candida*, contained approximately 0.20 mg of atropine and 0.65 mg of scopolamine.[4]

The symptoms and signs of *Datura* intoxication are due to competition by scopolamine and atropine with acetylcholine for a common binding site on muscarinic receptors located in exocrine glands, smooth and cardiac muscle, ganglia, intramural neurons, and the central nervous system. As such, they are known as muscarinic cholinergic blocking agents. When humans are exposed to graded doses of atropine, the constellation of organ manifestations occur in a predictable hierarchy: blockade of sweat, salivary, and bronchial gland secretion; mydriasis, loss of accommodation, and tachycardia; inhibition of micturation, and decreased tone and motility of the gastrointestinal tract; and impaired gastric acid secretion and motility.[5] The central nervous system effects of toxic doses of atropine include restlessness, irritability, disorientation, hallucinations, or delirium. In severe cases, coma, paralysis, respiratory failure, circulatory collapse, and death can occur. Due to greater permeation of the blood-brain barrier, central nervous system effects are seen with therapeutic doses of scopolamine; these include drowsiness, memory loss, fatigue, and euphoria. Higher doses of scopolamine produce similar central nervous system effects as atropine. The following metaphor has been taught to generations of clinicians to help them remember this clinical syndrome: "Hot as a hare, blind as a bat, dry as a bone, red as a beet, and mad as a hatter."

The clinical presentation of the patient in this case report is consistent with other studies and illustrates several differences in the pharmacology of scopolamine as compared to atropine. The symptoms of feeling warm and flushed, headache, xerostomia, and blurred vision, and the signs of mydriasis, sluggish and incomplete pupillary constriction to light, dry mucous membranes, decreased bowel sounds, warm, dry skin, and flushing of the face and neck are all explained by peripheral muscarinic receptor blockade. The occurrence of severe central nervous system signs and symptoms of emotional lability, incoordination, hallucinations about propeller blades, restlessness, confusion, and disorientation with peripheral manifestations confirm chemical analyses demonstrating scopolamine to be the principal agent. The presence of bradycardia, an unusual feature of an anticholinergic syndrome, can be explained by the effect of scopolamine on MI receptors of postganglionic parasympathetic neurons, thus abolishing the inhibitory effect of synaptic acetylcholine on neurotransmitter release.[5] The persistence of blurred vision at hospital discharge demonstrates the effect of atropine and scopolamine to cause prolonged impairment of pupillary and accommodation reflexes; full recovery may not occur for 7 to 12 days.

The treatment of cases of *Datura* intoxication is primarily supportive. Due to impaired peristalsis, all candidates considered for hospitalization should be given activated charcoal to limit absorption. Physostigmine, 1 mg to 4 mg, given by slow intravenous injection rapidly abolishes the systemic effects of anticholinergic drugs.[6] Due to the short half-life of physostigmine, the dose may have to be repeated every 1 to 2 hours in symptomatic patients.

While the acute anticholinergic syndrome is uncommon, the diagnosis is usually made by the astute clinician on the basis of the constellation of patient signs and symptoms. Treatment is easily administered and complete recovery is the rule. Recent reports underscore the potential for intentional misuse and accidental poisoning from *Datura* species.[7-8] Emergency room and primary care physicians in Hawaii need to be aware of the similar potential with the ornamental Angel's Trumpet Tree.

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Survey of Lead Levels in Patients Presenting to Child and Adolescent Psychiatry

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The role of lead as an environmental toxin is well documented; symptoms frequently include anemia, abdominal pain, paralysis, and encephalopathy. Recently lead has been cited as a possible etiologic factor in learning disabilities, attention problems, and symptoms of conduct disorder. Questions about the level at which threshold effects surface are difficult to answer because of the inconsistent findings in the literature. Ernhart critically reviewed 9 prospective studies which looked for behavioral effects of prenatal lead exposure and concluded that there was little consistency in studies.[1] Numerous other investigators did find evidence of neurobehavioral effects at low lead levels,[2-5] however, the effect of low lead levels on cognition, learning disabilities, and behavior remains unclear. Several studies have shown a subtle effect of asymptomatic lead exposure on cognitive ability. The Port Pirie prospective study, which compared lead levels in infant cord blood with IQ at 4 years, found an average decrease in IQ of 4.5% as the concentration of lead increased from 10 µg/dl to 30 µg/dl.[6] A second prospective study by Bellinger found lower levels of performance on the mental development index (MDI) of the Bayley Scales of Infant Development.[4] They compared umbilical cord lead levels at birth with capillary lead levels and MDI scores semiannually and up to 2 years. At all ages infants with a birth lead level >10 µg scored lower on the MDI than infants whose levels were <3 µg (low risk group) or 6 to 7 µg (median risk group). Dietrich found that the association between prenatal lead levels and performance on the Bayley Mental Development Index was mediated by birth weight and gestational age.[7] A cross-sectional study by Winneke sought to combine 8 individual studies within a single analysis to increase sample size and broaden the range of exposure in order to establish dose response contingencies. He found only a weak association between lead and IQ. The strongest, most consistent effect occurred for the Bender Gestalt Test and a test of serial reaction performance. However, the observed variance never exceeded 0.8% of the total variance.[4] Another cross-sectional study in Britain studied inspection time and reaction time and found both measures were worse at higher lead levels, but only inspection time was still significant after controlling for social and family background.[8] These same authors found a positive relationship between lead levels and teacher ratings on the Rutter behavior scale, especially the aggressive/antisocial and hyperactive subscores.[9]

Evidence against the effects of lead on cognition comes from 2 prospective studies, and criticism of the above studies. An Australian prospective study found no correlation between pre- or postnatal lead exposure in infancy and neurobehavioral development at 4 years of age.[10] In addition, a prospective study by Ernhart did not find pre- or postnatal lead exposure to be related to Bayley Mental Development Index or development in the preschool period.[11] Lastly, the criticism of the studies, which shows a positive association between lead and cognitive development, looks at small effects, and lack of control for certain confounds (especially maternal IQ) as problems interfering with strong conclusions. Despite the controversy, the Centers for Disease Control and the American Academy of Pediatrics have recommended universal screening of children. In addition, the American Academy of Child and Adolescent Psychiatry has recommended including lead toxicity in the differential diagnosis of children with symptoms of conduct disorder, behavior problems, learning disabilities, and attention problems.

A California study found 14% to 67% of all 1 to 5 year olds have blood lead levels >10 µg/dl.[12] The Agency for Toxic Substances and Disease Registry estimated 17% of preschool children have levels >15 µg/dl.[13] In Hawaii, there is evidence of elevated lead levels in the water system at Schofield Barracks and on the Big Island which makes screening all the more timely.[14] However a recent study in Hawaii by the Department of Health found a mean level of 4.5 µg/dl in 389 child participants.[15] These authors, therefore, did not recommend screening all children in Hawaii.

This study includes lead toxicity in the differential diagnosis of children presenting to Child and Adolescent Psychiatry and compares their lead levels to all lead levels drawn for military children on Oahu. The study assesses whether there is a relationship between behavioral, attentional, and learning problems and venous lead levels; it also looks for a difference between these children and a population sample of military children. This study

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adds to existing data by surveying lead levels in children from a specific population, namely those in Hawaii who are dependents of active duty military and are known to have neurobehavioral problems.

Table 1.—Mean Lead Levels by Age Group (µg/dl)

Age	Experimental (n=53)		Population Sample (n=440)	
	n	mean	n	mean
0 to 5	24	1.4	415	1.7
6 to 11	22	1.0	25	0.1

Methods

All parents of children and adolescents presenting to Child and Adolescent Psychiatry with symptoms of conduct disorder (lying, stealing, truancy, running away, property destruction, cruelty to animals, fighting), behavioral disorders, learning disabilities and attentional problems were given a Volunteer Agreement Affidavit and questionnaire summarizing the reasons for the venous blood test. Lead levels were tested at Pearl Harbor Industrial Hygiene Lab and used atomic absorption mass spectroscopy. Levels were reported with a 4% to 6% variance. Using Tripler's computer-automated lab retrieval method, 2 consecutive months of lead levels for military children were obtained as a comparison group. Parents were notified for any lead level above 5 µg/ml and screening of siblings was recommended in accordance with the recommendations from the American Academy of Child and Adolescent Psychiatry. A system was set up to monitor lead levels >10 µg/dl and provide chelation for children whose lead level exceeded 35 µg/dl. The 2 groups were compared using mean values for each group. A level reported as <5 µg/dl was calculated as 0 µg/dl. Chi squared analysis was used for the values >5 µg/dl in the experiential group, compared to the population sample.

Results

Overall, adolescents were difficult to obtain for the experimental group, and no adolescents were sampled in the population of military children whose blood was drawn during the months of December and January. Some parents declined the procedure and a few did not follow through even after being called and reminded. No values were greater than 7 µg/dl in the experimental group and only 4 were >10 µg/dl in the population sample. There were 53 samples in the experimental and 440 in the population sample with mean levels for both groups of less than 5 µg/dl even when broken down into age groups (Table 1). The incidence of values >5 µg/dl in the experimental group was 0.2 and 0.3 for the population sample. Chi-squared analysis comparing the number of values >5 µg/dl in the experimental group with the population sample revealed that the probability of the experimental group being different from the population sample was less than 0.2, but greater than 0.1. So the null hypothesis was accepted.

Discussion

The mean lead levels in this study are very similar to the mean levels obtained by the Hawaii Department of Health. This illustrates that military children in Hawaii who have different housing and are more transient do not have lead levels comparable to the California Survey and the data from the Toxic Disease Registry. There appears to be no relationship between behavioral, attentional, and learning problems and venous lead levels in the children tested. Lastly there is not a significant difference in lead levels in the children with known neurobehavioral problems and the population of military children screened between December 1993 and January 1994. These results add further to the data from the Department of Health and suggest that routine screening of children in Hawaii is not indicated. Although the number of children tested for lead in the Department of Child Psychiatry was not high, the fact that no level was >7 µg/dl is very significant and indicates that routine screening of all children with attention, behavioral, conduct, and learning problems is not indicated and, at $20 to $30 a test, is not cost-effective. We recommend screening only those children with *refractory* problems, those with severe difficulties, and those with known risk factors such as pica, dwelling in homes built before 1950, and those whose parents have an occupational exposure to lead.

Acknowledgements

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Cutaneous Melanoma in an Active Duty Soldier

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The incidence of cutaneous melanoma has increased exponentially in the last 50 years. In 1935 the lifetime risk of developing melanoma was 1:1500; by the mid-1980s the risk had increased to more than 1:150. If the increase continues, the estimated lifetime risk will be 1:90 in the year 2000.[1] The clinical criteria are: Asymmetry, irregular border, color variegation, and a diameter greater than 6 mm.[2] This report describes the occurrence of melanoma in an active duty troop. The authors wish to stress the importance of early detection of cutaneous melanoma and the inclusion of melanoma in the differential diagnosis on physical examination of young people.

Case Report

An 18-year-old active duty soldier presented to the clinic for evaluation of a mole on his right upper back that had been present for at least 2 years. Information provided at the time of his induction physical was remarkable only for "mild acne scarring on the back." There was no family history of skin cancer, although the patient has a history of multiple sunburning episodes.

He had fair skin, light-colored hair, and blue eyes. There was a 1.2 cm by 1.5 cm brown to black-colored plaque involving the right upper back (Fig 1). The borders were irregular and the color varied throughout the lesion. The plaque was excised with 1 mm margins.

On histologic examination there were atypical nests of epithelioid cells within the epidermis extending into the dermal regions to a depth of 2.5 mm. There were numerous mitotic figures and abundant melanin within melanophages. The margins were clear. These features were interpreted as being consistent with the diagnosis of malignant melanoma.

A chest roentgenogram and chest CT scan were normal. Serum lactate dehydrogenase (LDH) levels were also normal. Additional surgical margins were taken (3 cm diameter from original site) and a split-thickness graft performed at the site.



Fig 1.—1.2 cm by 1.5 cm brown to black plaque over right shoulder region.

Discussion

Active duty military personnel are at an increased risk for developing skin cancer from increased ultraviolet exposure. Ramani et al[3] surveyed 370 World War II veterans with skin cancer in reference to station location, place of service, skin cancer types, skin type, ethnic background, and estimated average hours outdoors per day during their lifetime. More patients with skin cancer were stationed in the Pacific (66%) than in Europe (34%) during the war (statistically significant on chi-square test). The authors conclude: 1) this study links early, time-limited, but intense sun exposure with the development of cutaneous malignancy years later; 2) persons with heavy sun exposure in the South Pacific or in Vietnam should be counseled to avoid future sun exposure; and 3) military personnel who serve in tropical and subtropical climates should be advised to avoid sunburns and use sunscreens regularly.

In another military study performed by Garland et al[4] person-years at risk and cases of malignant melanoma were determined using computerized service records and inpatient hospitalization files maintained at the Naval Health Research Center. There were a total of 176 confirmed cases of melanoma between 1974 to 1984. Occupations were categorized into indoor, outdoor, or indoor/outdoor groups. Compared to the U.S. civilian population, Navy personnel with indoor occupations had a higher age-adjusted incidence rate of melanoma (10.6 per 100,000). Individuals who worked in occupations requiring both indoor and outdoor exposure had the lowest rate (7.0 per 100,000). Two single occupations were found to have elevated rates of melanoma: Aircrew survival equipmentman and engineman. Incident rates were found to be higher on the trunk than on more

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commonly sunlight-exposed areas, such as the head and arms. Melanoma is second only to testicular cancer in men serving in the U.S. Navy.

Since cutaneous melanoma is potentially curable by surgical excision, early detection and removal of such lesions would reduce mortality.[5] This can happen only through public and professional education programs with particular emphasis on targeting high risk individuals. Fair skin, light hair color, freckles in adolescence, family members with melanoma, a changing mole, or severe sunburns are significant risk factors.[6-7] Since military personnel have been shown to be at increased risk for all types of skin cancer, thorough cutaneous examination should be considered an important part of the physical examination of active duty troops regardless of age. Suspicious lesions should be biopsied for histologic examination.

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16 Tips for Better Research Protocol Writing

Debora Schotik Chan, BS Pharmacy

U.S. Army medical and pharmacy residents are often required to perform research. After a research question has been identified, many residents find themselves stuck in writers' block when trying to write the protocol. Whether the research is basic science or clinical in nature, these 16 tips will help decrease the amount of time spent idly stuck in writers' block or performing rewrites and in turn, will expedite the process of Institutional Review Board (IRB) approval.

1. **Be clear and concise.** Don't be too wordy. Get rid of any words, sentences or phrases you do not need. A protocol that is too wordy will be seen as such.

2. **Don't try to impress the IRB with technobabble.** A protocol filled with technical words used inappropriately will hurt you in the long run. IRB members will easily identify this strategy and will confront you about it.

3. **Use the format designated by the IRB.** The order in which information is presented is as important as the content of your protocol. Follow the protocol layout recommended by the IRB. If you fail to do this, you will be asked to rewrite your protocol.

4. **Follow scientific method.** Address *introduction, objective, hypothesis, design, methods, and data analysis* as separate sections in the protocol layout. Do the same when writing your completed research for publication with the addition of *abstract, results, discussion and conclusion* sections. These sections will be contained in the format designated by the IRB, but will be identified by different names. Make sure you use the names recommended by the IRB.

5. **Specify study type and design.** Some key study designs are prospective, retrospective, single-blind, double-blind, open, randomized, sequential, crossover, placebo, standard control and case control. Examples of study types include human use, animal use, basic science, and survey.

6. **Write according to the IRB required style.** If the IRB does not specify a style, use the style recommended by the journal in which you plan to publish your manuscript. Most medical journals use *Uniform Requirements for Manuscripts Submitted to Biomedical Journals (JAMA.* 1993;269:2282-6) and *American Medical Association Manual of Style* as standard writing requirements.

7. **Write the introduction last.** Start somewhere in the middle. Writer's block occurs most often when you try to write a summary before you have written the experiment. Start wherever is most comfortable for you. Most researchers find that starting at the *design or methods* section is the easiest.

8. **Cite results of related studies.** IRB members will want to know where your study stands in the scientific arena and what contribution it will make to the literature. Cite only articles that are relevant to your study proposal.

9. **Sell your idea.** In response to decreased dollars for research funding, the IRB has to cut the number of protocols that are funded. Explain why your study will be an important addition to the literature or how it will affect hospital policy. If your study will save the hospital money, make that point very clear.

10. **Stay within a reasonable budget.** Ask for enough money to complete the project, but don't overestimate your budget. If your study is too expensive or if it is padded with unnecessary costs, it will not be funded. Also consider alternative forms of financing for your research, such as obtaining grants and collaborating with other institutions.

11. **Clarify monetary issues.** Don't assume you have the support of all departments involved in your project. Many principal investigators neglect to include funding for medications, supplies, and time required from other departments or services in their budgets. Seek advice and approval from all departments involved before submitting your protocol.

12. **Don't forget ethics.** Make sure your study is ethical to all study participants. Address any anticipated concerns they may have both in the protocol and consent form. A good review of ethical issues is the "Belmont Report," *Federal Register* 79-12065 or call U.S. Food and Drug Administration, Office of Health Affairs, (301) 443-1382.

13. **Make sure the consent form is written at appropriate reading level.** All study participants must be able to read and understand the form. Make sure the plan, risks and termination procedures are clearly explained. Write the form at a Grades 5 to 8 reading level.

14. **Check spelling and grammar.** Run your protocol through both the spell and grammar check on your computer.

15. **Read your protocol out loud.** The spell check and grammar check are not perfect. Words can be spelled correctly but may be used incorrectly in that context. This may not be evident until you *hear* the mistake.

16. **Have someone proofread your proposal.** Recruit two or more people to proofread your protocol if you can. Preferably get someone in your field of expertise and someone who does a lot of writing, editing, or typing.

Conservative Therapy for Gastroesophageal Reflux in Infants with Obstructive Pulmonary Disease

Charles W. Callahan DO, MAJ

Gastroesophageal reflux (GER) is a commonly recognized problem in infants. However, it is difficult to demonstrate a causal relationship between GER and recurrent obstructive pulmonary disease (ROPD) in infants. In this review, 3 infants with GER and severe ROPD experienced dramatic improvement with conservative *GER therapy.*

Introduction

All infants have gastroesophageal reflux (GER).[1] Diagnostic tests for GER in infancy are useful to determine whether GER is excessive, prolonged, or is associated with esophageal disease.[2] The evaluation of infants who have GER and symptoms of recurrent obstructive pulmonary disease such as wheezing, cough or noisy breathing may be confusing. To date, there is no single diagnostic test that will prove causation between GER and pulmonary disease.[3-4]

Infants with GER may develop symptoms of airway obstruction by one of two mechanisms: Direct, repeated aspiration of gastric contents[5-6] or reflex stimulation mediated by acidic gastric contents refluxed into the lower esophagus.[7-9] The ideal diagnostic study in a child with recurrent obstructive pulmonary disease and GER would be able to demonstrate a temporal association between GER and increased airway resistance.[3-4] In the absence of the availability of such a study, evidence for GER-causing obstructive pulmonary disease in infants is largely circumstantial.

Three cases of infants with regurgitation and symptoms of severe obstructive pulmonary disease are reviewed, and their symptoms abated after conservative therapy of GER. This suggests that GER may be an etiology of airway obstruction in a subset of otherwise healthy infants and reinforces the potential benefit of conservative GER therapy in these patients.

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Conclusions and opinions expressed are those of the author and do not necessarily reflect the position or policy of the Department of Defense, the Department of the Army the Army Medical Department, or the Health Services Command.

Case 1

BJ is a 6-month old white infant with a 2-month history of congestion and wheezing. Her symptoms developed after an episode of otitis at 4 months of age. She was diagnosed with bronchitis, then hospitalized twice in the next month with asthma and clinical pneumonia. Her wheezing was *continuous* but was especially notable at night. In addition, she had episodes of coughing and hoarseness. She was the term product of an uncomplicated pregnancy. Since her first month of life, she had frequent episodes of regurgitation. She was drinking 36 ounces of cow's-milk formula, 6 ounces every 4 to 6 hours (19.3 cc/kg/feeding, 116 cc/kg/day.) Her medications included cefaclor, theophylline, albuterol syrup, prednisone syrup, erythromycin, as well as albuterol and cromolyn by nebulization. There was no family history of asthma.

On physical examination, BJ was well nourished and developed. Her height (61.2 cm) and weight (9.3 kg) were greater than the 90th percentile for age. Her respiratory rate was 52 breaths per minute. Pulse oximetry on room air was 95%. She had bilateral otitis media. Inspection of the chest revealed mild subcostal retractions and auscultation of her chest, diffuse heterophonous wheezing with coarse inspiratory and expiratory crackles. She had a prominent homophonous (central) wheeze as well. Chest radiograph revealed hyperinflation with marked, diffuse interstitial infiltrates bilaterally. Her sweat chloride level was normal.

Nebulized therapy for reactive airways was continued, with the addition of amoxicillin/clavulanate instead of the cefaclor and erythromycin for the otitis. Conservative therapy for gastroesophageal reflux was instituted including elevation of the head of her crib and the institution of small, more frequent feedings (3 ounces every 3 to 4 hours.) A bedtime fast was also instituted: no feeding within 90 minutes of nap or bedtime. She was to avoid infant seats, car seats, or infant swings for the same period after meals.

She returned 3 days later for a barium swallow. This study demonstrated no GER and normal gastric emptying. Her wheezing had diminished and the coughing had ceased. Five days later when she returned to review the results of the evaluation, she was completely wheeze free, had no subcostal retractions and had a resting respiratory rate of 28 breaths per minute. She continues to grow well and has had no recurrence of symptoms of airway obstruction.

Case 2

SB was a 10-week old girl who had a history of wheezing and cough since 2 weeks of age. She had infrequent episodes of regurgitation, but had spasms of cough and wheezing when

supine and on awakening. At one month of age she was hospitalized with a diagnosis of bronchiolitis. Culture for respiratory syncytial virus was negative. A barium swallow demonstrated no GER and normal gastric emptying. She was discharged on nebulized albuterol and cromolyn, but was hospitalized again 5 days later with the same symptoms. She was discharged on nebulized therapy and erythromycin/sulfamethoxazole. There was a history of asthma in both parents, although there were no smokers at home. She was drinking 6 ounces of Isomil formula 6 times a day (29.6 cc/kg/feeding, 178 cc/kg/day).

On examination, she was well nourished with weight (6.08 kg) greater than the 90th percentile and height (57 cm) at the 50th percentile. Her heart rate was 150 beats per minute and her respiratory rate was 44 while sleeping. Pulse oximetry on room air was 100%. She had an asynchronous respiratory pattern. Auscultation of the chest revealed diffuse heterophonous wheezing and coarse crackles. A chest radiograph revealed hyperinflation and perihilar infiltrates. Her sweat chloride level was normal.

Her nebulized bronchodilators were continued, along with a prednisone burst (1.5 mg/kg/day for 5 days.) She was instructed to follow conservative therapy for GER, including limitation of feedings to 3 ounces every 3 to 4 hours. On phone follow-up 3 days later she had experienced marked improvement. She had no cough or audible wheeze. One month later, she had experienced no recurrence of her symptoms and was growing well.

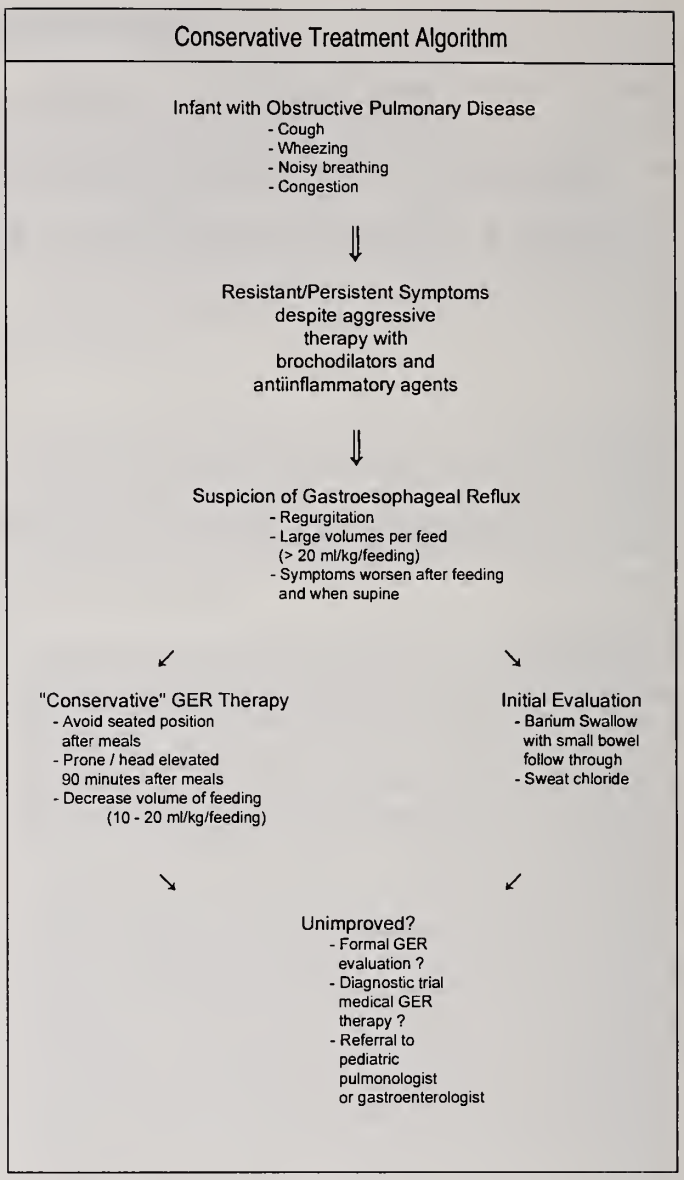
Case 3

CB was a 4-month old with a 3-month history of cough and wheeze. He frequently awakened at night with coughing spells. He had a history of frequent regurgitation. There was no family history of asthma and there were no smokers at home. The infant was drinking 30 to 40 ounces of liquids a day, including 5 seven-ounce bottles of soy formula (26.95 cc/kg/feeding, 158 cc/kg/day formula). He was being treated with albuterol orally and by nebulization. He was well nourished on examination, with height (65.5 cm) greater than the 95th percentile and weight (7.79 kg) greater than the 90th percentile. His heart rate was 120 beats per minute and his respiratory rate was 42 breaths per minute awake. He had subcostal retractions as well as heterophonous and homophonous wheezing and rhonchi on auscultation. Chest radiograph revealed hyperinflation and increased interstitial markings. His sweat chloride level was normal, and a barium swallow showed organoaxial rotation, but normal gastric emptying and no GER.

Therapy with nebulized bronchodilators was continued and a course of amoxicillin/clavulate was begun because of the possibility of a chronic airway infection. He started conservative therapy for GER and his symptoms cleared rapidly with no recurrence of symptoms.

Discussion

The diagnosis of GER in these 3 infants was made qualitatively: All 3 experienced episodes of regurgitation, 2 during their initial office visit. In each case, a barium swallow failed to demonstrate GER despite a strong history of regurgitation, emphasizing the insensitivity of this test in detecting GER.[2] All 3 had symptoms of small airway obstructive pulmonary disease with worsening of symptoms at night. In each case, the symptoms of airway obstruction resolved rapidly after initiation of conservative GER therapy. It could easily be argued that it was the cumulative effect of the bronchodilators or antibiotics that caused the improvement, although the rapidity of resolution suggests otherwise.



When GER occurs in an infant with symptoms of obstructive pulmonary disease, however, it is often impossible to prove that the reflux caused symptoms of airway obstruction.[4] In addition, it is difficult to prove that improvement in pulmonary symptoms is a result of GER therapy. Thus, the decision to treat or to further evaluate the infant with obstructive pulmonary disease and suspected GER is often a clinical one. A trial of conservative therapy for GER at the time a limited evaluation is undertaken often can be helpful.

Conservative therapy of GER usually involves a combination of measures aimed to decrease gastric volume, increase the density of stomach contents, avoid the influence of gravity and increased abdominal pressure on the lower esophageal sphincter. Traditionally, these measures have included: positioning, thickened feeds, small frequent feedings, and bedtime fasting.[3]

In 1947, Neuhauser and Berenberg reported *cardia-esophageal relaxation* in a dozen infants who were diagnosed by barium esophagram.[10] Within 5 years, a case of *cardio-chalasia* and therapy utilizing a *chair* designed by Sister D.N. Roberts

was reported.[11] This patient was considered by the authors, and presumably the editors, to be "sufficiently rare to merit publication of a single case."[11] Success in therapy was attributed to positioning in the chair for all feedings and for an hour afterward. Subsequent papers recommended construction of a similar chair with plaster of paris[12] or plywood.[13]

In the past decade, several studies demonstrated that positioning children with GER prone or prone with head elevated was superior to the infant seat in decreasing the frequency and duration of GER episodes.[14-16] In fact, the chalasia chair might even aggravate the condition it was designed to treat.[15] While car seats, infant swings, and infant seats have not been specifically studied, it is likely that they aggravate the condition as well. In 1990, Orenstein demonstrated in a large prospective study that elevation of the head is no better than flat prone positioning in infants less than 6 months of age.[17] Thus, it is safe to recommend that infants who are suspected of having GER or GER-associated pulmonary disease be positioned prone or possibly prone with their heads elevated after meals. Ideally, they should remain in this position for the time it takes for their stomachs to empty, typically 90 minutes to 2 hours.[18]

For more than 30 years, thickened feedings have been recommended for the treatment of infants with GER, especially those who do not respond to postural therapy.[19] The recommended dose of rice cereal has been one tablespoon or 15 ml of cereal per ounce of formula.[19] Several recent studies have demonstrated that thickening of feeds may actually make GER worse[20-21] and may aggravate pulmonary symptoms such as cough.[22] Thus, while some consider thickened feedings to be a basic element of conservative therapy in GER, it may not be beneficial in GER-associated pulmonary disease.

Total volume of feeding has been shown to be related to the duration of GER in infants with and without significant GER.[23] In this study, a feeding volume of 18 cc/kg resulted in almost twice as much GER as a feeding of 9 cc/kg. Several of the study infants who were allowed to take feedings ad libitum drank more than 30 cc/kg and had a proportional increase in the total duration of GER.[23] Thus, feeding volume is a significant determinant of GER for the first hour after a meal. It follows that limiting the volume of the feeding and positioning the infant immediately following the feeding may help to alleviate the symptoms of GER. However, if the volume of feedings is limited, it is necessary to ensure that an adequate volume of formula is taken over the course of 24 hours to meet metabolic needs and sustain adequate growth. Thus, in this setting, an increased frequency of feedings may be necessary.

When the possibility of GER in an infant with obstructive pulmonary disease is being considered, the absence of a secondary cause for GER should be established. In the simplest cases, a barium swallow and small bowel follow through will eliminate the possibility of anatomic obstruction of the upper gastrointestinal tract as an etiology for GER. The barium study is not a sensitive diagnostic evaluation for reflux, and so a negative study does not eliminate the possibility of GER. In addition, infants with cystic fibrosis have been treated for GER before the diagnosis of CF was made.[24-25] Therefore, sweat chloride concentration should be measured in infants with obstructive pulmonary disease in whom the diagnosis of GER is being considered. When these studies are unfruitful and the infant does not respond to simple conservative therapy for GER, then consultation with a pediatric gastroenterologist or pulmonologist may be warranted.

Summary

Gastroesophageal reflux should be considered in the evaluation of the infant with obstructive lung disease. Qualitative evidence of GER includes a history of regurgitation and nighttime pulmonary symptoms. Secondary causes of GER such as gastrointestinal obstruction should be eliminated by simple screening tests. Conservative measures that decrease gastric volume and avoid conditions that promote GER will be sufficient to eliminate the pulmonary symptoms in some infants. If wheezing persists, additional diagnostic evaluation should be initiated.

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Testicular Cysts: A Case Report and Review of a Recent Tripler Experience

Steven N. Gange MD,MAJ*, Leslie S. Heldman MD, CPT**, Steven C. Yuill MD, MAJ†

A case of an unusually large, multilocular testicular cyst was presented and managed at Tripler Army Medical Center. Of 834 consecutive scrotal ultrasounds, 30 intratesticular cysts were seen (3.6 %). In contrast, of 892 consecutive testis pathology specimens, only one case was found (0.11 %). These findings support those of previous reports suggesting a much greater prevalence of testicular cysts than are clinically significant. Diagnostic and therapeutic recommendations are presented.

Case Report

A healthy 72-year-old Samoan was referred to the Tripler Urology Clinic in June 1994 with a complaint of progressive left scrotal swelling and discomfort for 6 months. He denied experiencing genitourinary infection or trauma and the physical exam revealed a large, firm left scrotal mass which was partially transilluminating. The serum tumor markers were normal (beta-HCG<10 mIU/ml and alpha-fetoprotein =8 ng/ml).

A scrotal ultrasound was ordered (Fig 1), which revealed an 8x4x4 cm multiloculated cystic lesion displacing a small rim of left testis. Additionally, a small left spermatocele and a small left hydrocele were identified.

On the basis of the patient's symptoms and the ultrasound findings, an elective left inguinal orchiectomy was performed and the patient recovered uneventfully (Fig 2).

Histologic evaluation demonstrated a testicular cyst with a flattened, non-ciliated epithelium (Fig 3). There was no evidence of malignancy.

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Discussion

Clinically significant intratesticular cysts are rare. Dmochowski et al carefully reviewed the literature in 1989 and found 12 acceptably reported cases of testicular cysts, all unilocular. They also reported 5 new cases, one of which was multilocular.[1] Since that time others have reported small numbers of surgical cases; to date only 20 unilocular and 4 multilocular testis cysts have been described.[2-4]

On the other hand, testis cysts detected incidentally by ultrasonography are much more common. The combined results of several recent studies in the radiologic literature demonstrate that an additional 53 testicular cysts have been incidentally diagnosed during consecutive scrotal ultrasound exams in 1194 patients (4.4% overall).[5-7]

We reviewed the recent Tripler experience with testicular cysts in order to further evaluate this apparently large difference between actual and clinical prevalence (Table 1). A review of all testis pathology reports from January 1987 to December 1994 revealed that ours was the only testicular cyst surgically removed, representing 0.11% of the 892 testis pathology cases reviewed. In contrast, review of scrotal ultrasound reports from January 1992 to December 1994 yielded 30 testicular cysts, representing 3.6% of the 834 studies performed.

Table 1.—Recent Testicular Cysts Diagnosed at Tripler Army Medical Center

Source of Diagnostic Information	Total Number of Cases Reviewed	Number of Cysts Indentified	Pecentage of Cases with Cysts
Testis Pathology Cases	892	1	0.11
Scrotal Ultrasounds	834	30	3.6

Intratesticular cysts are usually small. Those cysts incidentally detected by ultrasound are typically in the range of 2 mm to 5 mm in diameter, and none has been reported larger than 18 mm.[5-7] Palpable or symptomatic cysts are occasionally larger. Nevertheless only 3 cysts greater than 20 mm in diameter have been described, the largest being an 8 cm unilocular cyst.[1] Our case represents the largest multiloculated testicular cyst reported.

The diagnostic sonographic criteria of a benign intratesticular cyst are the same as those of a renal cyst: sharply defined walls, no internal echoes, and enhanced posterior wall sound transmission.[8] The distinction between an intratesticular cyst and other

well-described cystic lesions of the testis, such as epidermoid cysts, tunica albuginea cysts, cysts associated with neoplasm, and cystic dysplasia of the testis, should be readily accomplished by ultrasound given the unique sonographic appearance of these entities.[6,9-11] Because of the unusually large size of our patient's lesion, malignancy could not be excluded by ultrasound and an inguinal orchiectomy was performed.

Histologically, the diagnosis of an intratesticular cyst is confirmed when the lumen contains clear, acellular fluid, and is surrounded by a discrete wall of fibrous tissue lined with flat to cuboidal epithelium without evidence of teratoma, carcinoma, chronic inflammation or fibrosis in the remainder of the testis.[1]

The etiology of intratesticular cysts is uncertain. Congenital, infectious, and traumatic causes have all been proposed but not proven.[12-14] Our case had no features to support any of these possibilities. There are no reports in the literature of malignant degeneration of a testis cyst.

Based on the low number of clinically significant cysts relative to those found on ultrasound, it is apparent that many intratesticular cysts will not require removal. Occasionally, as in our case, surgery will be indicated for relief of symptoms. Surgical removal of testicular lesions has traditionally meant orchiectomy, however, the continued improvement of sonography has allowed better intratesticular localization so that parenchymal-sparing excision of non-neoplastic masses including cysts is now feasible.[14-15]

Conclusions

We report a rare and unusually large, benign, multiloculated testicular cyst presenting in a symptomatic elderly patient. Typically, testicular cysts are small (<2 cm) and are discovered incidentally by ultrasound. Clinically significant intratesticular cysts are uncommon. The sonographic diagnosis is usually straightforward. When the diagnosis is clear, surgery should be reserved for symptomatic patients and should involve sparing testicular parenchyma when possible.

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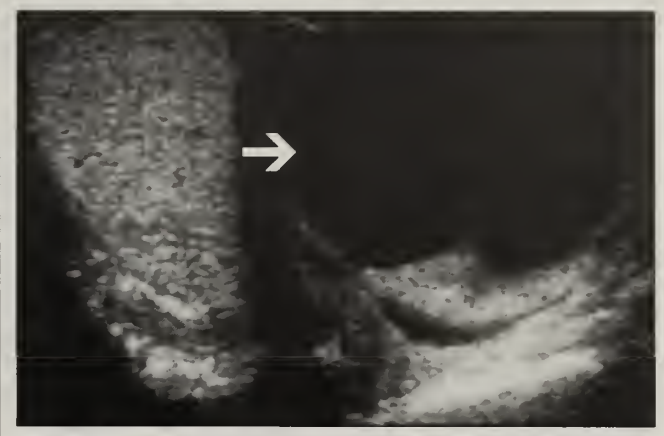


Fig 1.—Transverse image of scrotal ultrasound revealing large left testicular cyst and small rim of normal appearing testis. Right testis is normal.



Fig 2.—Bivalved left testis. Note septations seen in multilocular cysts.



Fig 3.—H & E stain of testicular cyst. Note flattened epithelium lining cyst cavity.

HMA Council Highlights

June 2, 1995
Roger T. Kimura MD, Secretary

The HMA Council was called to order by Dr Frederick C. Holschuh, President at 5:40 pm.

Present: C. Lehman, President-elect; R. Kimura, Secretary; J. Spangler, Treasurer; AMA Delegates R. Stodd, C. Kam; Speaker L. Howard; Vice Speaker H.K.W. Chinn; County Society Presidents D. Canete, Honolulu; E. Bade, Hawaii; M. Joshi, Maui; T. Smith, West Hawaii; Councilors T. Au, P. Chinn, W. Dang, Jr, P. DeMare, S. Hundahl, M. Shirasu, J. Betwee, B. Shitamoto, P. Kim, C. Kadooka, A. Bairos; Past Presidents W. Chang, W. Dang, G. Goto, J. Kim, J. Lumeng, J. McDonnell, S. Wallach; Medical Students A. Matteo, K.A. Voloch; Young Physicians Delegate Cynthia Goto.

HMA staff: Jennie Asato, J. Estioko, P. Kawamoto, B. Kendro, L.P. Tong, J. Won, and A. Rogness, recording secretary.

For Action

A motion passed that the HMA co-sponsor in name only the Healing Alternatives Seminar to be held on October 17 to 19, 1995 at the Hawaiian Regent Hotel.

Council approved the HMA Pension Committee's recommendation to freeze employee retirement benefits for one year so $47,000 would not be required from HMA. A motion was passed that the Pension Committee design a solution to this problem within the next two months and report to Council.

A motion was passed to endorse the HMA Officers' letters concerning Dr Zelko.

It was agreed that HMA will contribute $500 to the Play-It-Safe Program for children.

Council approved the CME Committee's recommended changes to the CME Mission Statement.

The Membership Benefits and Recruitment Committee's recommendations were approved to change the committee's name to Membership Benefits Committee. Council referred the following recommendations to the Long Range Planning Committee: 1) The Membership Task Force and Commissioners be involved with the Long Range Planning Committee and design membership recruitment tools, and that young physicians be assigned to committees, 2) Council create seats for different organizations, and 3) overhaul the HMA Mission Statement.

A motion was passed for HMA to bid on the Hawaii PRO, if the opportunity arises. The HMO could be run through the Hawaii Foundation for Medical Care.

HMA will oppose the proposed nurse prescription formulary; it is potentially harmful to patient safety. A letter will be sent to the Board of Medical Examiners stating HMA's opposition to the formulary with suggestions to help ensure patient safety.

A motion was passed that a formal report be given at the next Council meeting regarding results of the HMA QUEST survey and the quarterly reports of the insurance plans are required to be given to HCFA and the State.

County Society Reports

Maui.—Dr M. Joshi reported 1) that Drs A. Don and L. Schlesinger spoke at their last County meeting. Dr Schlesinger spoke about impaired physicians. 2) CHESS, a computerized program developed on the Mainland that allows people who have AIDS, terminal illness, or have been sexually abused to talk to other people via modem.

West Hawaii.—Dr T. Smith reported that the Urban Institute came to West Hawaii to find out why that area had the lowest QUEST physician participation in the state. A new clinic will be established on Maui and Kona in July with Spectrum, a Mainland group. Dr Bairos drafted a simple membership survey that will be tabulated and submitted to the HMA Executive Committee.

Hawaii.—Dr E. Bade reported that the County had a number of community meetings. Hawaii County is going to have a group from California train and certify nurses on sexual assault examinations. The County Council supported the program with $12,000.

Honolulu.—Dr D. Canete reported that the restructuring of the Board of Governors is almost completed. A draft was distributed to Council. It is being suggested that there be one Governor for each 250 members or fraction thereof for each of four Oahu districts: East, west, central and windward). Dr Pat Chinn has resigned as chair of the Mini-Internship Program. Dr Canete pointed out how successful the program had been under her direction, and Council gave her a round of applause. Dr Livingston Wong will be the new chair.

For Information

CVS.—Dr DeMare visited a central credentialing site in Omaha in May 1995; its program has been quite successful. It is the opinion of some physicians that the HMA should set up its own central verification service.

HMA/PMAG.—Dr Don reported that PMAG has agreed to buy 500 of the IPN shares. HMA and PMAG are in the process of naming their 11-member board of directors.

Managed Care Seminar.—The seminar will be held on July 23. The length of the seminar is currently being discussed. The Workshop, produced by the AMA will introduce physicians to concepts, trends, and practice management techniques involved in managed care. AMA President Lonnie Bristow will discuss trends in managed care.

Council was adjourned at 10 pm.

Our Twentieth Anniversary, 1975-1995

Twenty years ago, when commercial carriers abandoned the medical professional liability insurance market, MIEC was formed by northern California medical societies and a group of pioneering physicians. When this liability insurance crisis spread to Hawaii, the Hawaii Medical Association agreed that physicians should participate in their own professional liability insurance company. With HMA support and sponsorship, MIEC was licensed in Hawaii and has provided protection for its physicians since 1981.

In our twentieth anniversary year, MIEC covers 5,200 physicians in California, Alaska, Hawaii, Idaho and Nevada. Together with our wholly-owned subsidiary, Claremont Liability Insurance Company, we can insure the liabilities of individual doctors and organizations involved in today's changing "managed care" environment.

MIEC has returned more than $115 million in premium credits to its policyholder owners. MIEC also has consistently earned A.M. Best Company's top rating of A+ (Superior) for its financial stability.

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News and Notes

Henry N. Yokoyama MD

Life in These Parts

The ozone level above the islands dropped 14% in January as compared to January 1979. Moana Loa Observatory director **Russ Schnell** reports that "volcanic dust destroys ozone, but when the dust falls away, the ozone layer should recover." Meanwhile, HMJ editor and dermatologist **Norman Goldstein** recommends a broad-spectrum sunscreen that blocks UVA and UVB. In his office he recommends SPF 30 sunscreens, but for the average population SPF 15 should suffice. The sunscreen should be applied to the backs of hands, the V of the chest and all other exposed areas.

A three month UH study compared three diets: a typical U.S. diet containing 37% calories from fat; a similar diet with macadamia nuts providing the fat calories; and the American Heart Association "prudent diet" with 30% of calories from fat. The macadamia diet produced lower triglyceride levels than the other two diets.

Gilbert Wergowske, associate professor at the UH school of Medicine said, "Macadamia nuts have higher and more unsaturated fatty acids than olive oil." **J. David Curb**, principal investigator says "It turns out that the fats don't affect cholesterol. Macadamia nuts take a bad rap for being high in fat when the evidence shows they're good for you. Macadamia nuts, like olive oil, are high in oleic acid, a monounsaturated fatty acid which helps lower cholesterol."

Songwriter G.M. had a hit album and made millions. Then he lived it up with fancy cars, several homes and an entourage of hangers on. He found himself broke, in debt, and with no more hit albums in the coffer.He studied philosophy, religion, etc, and finally found his salvation in a Hindu monk in Malibu County who uttered 8 words that changed his whole life: "What you really need is a good accountant." Now he has money in the bank, has cleared his debt, and has hit albums.
(Paul Harvey, KHVH-radio, June 14, 1995).

Roberto Moulin, Kailua physician sent the following poem:

Stupid men who blame
women without reason,
Ignoring you are the source
of what you condemn.
For who is more to blame
—even if both do wrong—
She who sins for the pay
Or he who pays to sin?

"I'm writing in response to the efforts being made to pass strict penalties for hookers."
(Juana Inez de la Cruz, 18th century Spanish poet)

The Federation of State Medical Boards reports that a smaller proportion of Hawaii physicians were disciplined in 1994 than in any other state. The five Hawaii physicians disciplined by the Hawaii Board of Medical Examiners translates to 1.1 per 1,000 physicians. The national average was 6.7/1000. HMA assistant executive director **Becky Kendro** adds, "There are not many complaints about doctors here. From my vantage point, we have a very active Board of Medical Examiners and an active peer review process. Maybe our doctors are just doing a fine job."

Physician Moves

May: **Michael Bornemann** (internist and endocrinologist) opened at Queen's POB II, Suite 304.

Ophthalmologist **Margaret Cheung** opened at St Francis Plaza-West Suite 100, and at St Francis Medical Office Bldg, Suite 301.

Elected, Appointed, and Honored

Susan Spangler, John Spangler's spouse, was chosen the Hawaii State Mother of the Year by the American Mother's Inc of Springfield, Virginia. Susan has a long list of community service accomplishments, including her current role as president of the Outdoor Circle and mother of three sons and a daughter.

Brian Ogawa, Maui physician, was one of 10 Americans honored with the 1995 Crime Victim Service Awards by President Clinton on April 28. Brian heads a victim assistance program and directs a health center for crime victims.

Camilo Rosales of Kahului was recently appointed cancer liaison physician for the Maui Memorial Hospital cancer program.

Myron Shirasu's Witticism

(Gleaned during a Bristol-Myers Squibb dinner lecture at the Hawaii Prince Kilauea Room where we sat together.)

When Myron's wife **Karen** threw a large dog cookie for their pet terrier, he caught it in mid air and promptly rolled over and played dead. With keen acumen, Myron observed that his tongue was cyanotic and calmly contemplated an emergency tracheostomy—but where on the tiny neck to make the incision? Karen suggested calling 911. Myron doubted they would respond to a puppy emergency. "We don't need to explain that it's a dog," she argued.

Aptly, in the heat of the debate, Myron remembered the Heimlich maneuver—but how to do it on a tiny dog? He cradled the still pup in his arms and tentatively thumped the chest. Softly at first, then harder each time. Finally on the fourth thump, the errant biscuit popped out, the terrier revived and tried to bite the hand that had saved him.

When fellow internist **Art Wong** thanked **Myron** for the letter of recommendation to accompany his KMC reapplication for staff privileges, Myron complained that he had to go to confession for writing all those lies (the situation is even more hilarious if you recall that Myron's dad was a Buddhist priest and that he was supposed to take over as a dutiful son)

Myron's definition of Stupid: A local guy who cheats on his wife by taking his girlfriend to Las Vegas and stays at the California Hotel. (A favorite rendezvous for Hawaii residents).

Medical Humor

Condensed excerpts from *Stitches—The Journal of Medical Humor*, April 1995.

Slight Confusion

We were watching the TV news with our five-year old grandson, when a news item mentioned an AIDS benefit concert. Ben turned to me and said, "Grandpa—Grandpa Crone (the other set of grandparents) has AIDS."

It seemed for a moment that my heart stopped. I was quite startled by this bit of information.

Ben continued, not noticing my delay in answering, "Yes, he has them in both ears."
(Maxine Geddes, Delta, BC)

Risky Business

Several years ago, Mr Schwarz, an 87-year-old widower, proudly presented to the geriatrics assessment unit demanding a penile implant. He lived alone, but claimed, "There are many women in my building who are very interested in me and my furniture."

I conducted a careful history and physical to explore the possible causes of impotence and to review the patient's surgical risk.

Mr Schwartz anxiously inquired, "So, Doc, can I get my implant?"

"Well, first let's review the risks," I said cautiously.

"Oh don't worry about the risks," he protested. "I always use a condom."
(Rubin Becker, Laval, Quebec)

Laughter is the Best Medicine

Excerpts from *Reader's Digest*, June 1995

Through the pitch-black night, the captain sees a light dead ahead on a collision course with his ship. He sends a signal: "Change your course 10 degrees east."

The light signals back, "Change your course 10 degrees west."

Angry, the captain sends, "I'm a navy captain! Change your course, sir!"

"I'm a seaman second class," comes the reply. "Change your course!"

Now the captain is furious, "I'm a battleship! I'm not changing course!"

There's one last reply. "I'm a lighthouse. Your call."
(Contributed by Dan Bell)

Classified Notices

To place a classified notice:
HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Position Available

Medical Director sought for an exciting opportunity, in a multicultural, non-profit Community Health Center in rural coastal Oahu. The Health Center provides a full range of outpatient and emergency medical services for the Waianae Coast with over 100,00 patient visits/year. Applicants must be board-certified in a primary care specialty with 5 years of clinical practice and at least 3-5 years of medical administrative experience including managed care. Full benefits package and competitive salary. Position will be available April 1, 1996. If interested, send CV by mail or fax by August 15, 1995 to Waianae Coast Comprehensive Health Center, Medical Administration Office, 86-260 Farrington Highway, Waianae HI 96792. Fax 808-696-0389 Phone 808-696-7081.

General Internist.—The Dept of Veterans Affairs, Honolulu, Hawaii is seeking an outstanding clinician-academician for a position with a recently established primary care team. Applicants should be board-certified and fully qualified for a university faculty appointment. The position included direct patient care, teaching/mentoring and anticipated research activities. An active medical license in any state and U.S. citizenship are required. Potential applicants should send CV and letter of interest to Steven MacBride MD, Chief of Medicine (111), VA Medical and Regional Office Center, 300 Ala Moana Blvd, Box 50188, Honolulu, HI 96850. FAX (808)-566-1896. An Equal Opportunity Employer.

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Controversies in Medicine

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- Treatment Options in the Acute Stroke Patient
- New Concepts in the Cause and Treatment of Alzheimer's Disease
- Cholesterol Confusion
- Effectiveness of Cancer Screening Programs
- Medical vs. Surgical Treatment of Coronary Artery Disease
- The Role of Antiviral Therapy in the HIV-positive Patient
- The Challenges of Caring for Patients with Fatal Illness
- Historical Overview of Native Hawaiian Health Care
- Update of Hawaiian Health Care Systems
- Challenges to Collaboration
- Case Discussion: Diet and Weight Management
- Case Discussion: Asthma



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The Weathervane

Russell T. Stodd MD

One More Quicksand Pit in the Land of Managed Health Care.

In Texas, an emergency room physician cared for a 49-year-old man who was known to have hypertension, who was extremely ill with headache and nausea, and had a BP of 171/105. In an effort to see the patient admitted for medical control, the ER doc phoned the HMO (Humana) physician on-call. A heated telephone conversation ensued with the result that the patient was denied admission. The HMO physician on-call, who did not know the patient, said the patient should go home on medication and come to his office in the morning. The patient suffered a paralyzing stroke after leaving the ER and brought a malpractice complaint based on the refusal of admission. Humana was exempted from liability by the ERISA statute, the hospital settled for six-figures, and the on-call physician was granted a summary judgment since he had never seen the patient. However, the Texas Court of Appeals reversed that decision, ruling that the patient's health care plan provided a doctor on call, and that when consulted, there is a physician/patient relationship between the doctor and the insured. The significance of this decision is that it expands the liability for managed-care plans. In essence, once a doctor signs a contract with an HMO, it creates a potential relationship with every patient in the plan!

There Is Nothing More Frightful than Ignorance in Action!

The kind of arrangements encouraged between attorneys, accountants, and other professionals or businesses, become criminal if they involve doctors and medical care. Stark I and Stark II were unleashed on the body of medicine by the Office of the Inspector General of DHHS as of March 31, 1995. The penalties for referrals to certain entities and for prohibited arrangements and schemes, call for fines of not more than $100,000. The harshest penalties are directed at physicians or facilities that enter into cross-referral schemes in which owners of one entity arrange and refer to the other and vice-versa. A disgruntled orthopedic patient who could no longer get x-rays from his doctor wrote to Stark, "Wake up and smell the roses. Your legislation is out of step with reality. You have not helped anyone, but rather created a nightmare." Now even Pete Stark admits that some changes must be made.

The World Has Achieved Brilliance Without Conscience.

A surgical resident physician was stuck with a needle while caring for a patient who may have been HIV infected. When the doctor tested positive for HIV, he was suspended from the surgical program and offered alternative residencies. He refused and was dismissed from the hospital staff. Although there is no documented case of surgeon-to-patient transmission, the court supported the hospital action and cited the CDC recommendation that hospitals be allowed to bar HIV-positive surgeons from performing *exposure-prone* procedures.

The Wolf Will Hire Himself Off Cheaply as a Shepherd.

The bold legislative proposal from the House of Representatives regarding limits on malpractice awards for pain and suffering was discarded by the Senate. The limit of $250,000 was seen as *too radical* and the Senate even turned down a limit of $500,000. Self-appointed consumer advocate, Ralph Nader, denounced any restrictions on malpractice awards and cited the disgracefully flawed study which purported to show 80,000 hospital deaths per year due to negligence. Mr Nader has never revealed his sources of financial support, but he invariably champions eloquently and often on behalf of personal injury attorneys. Senators Inouye and Akaka voted with the trial attorneys.

Yon Cassius Thinks Too Much. Such Men are Dangerous.

A doctor injected a paralytic drug into a three-day-old infant causing death, and the doctor was indicted for murder. The three-judge panel who heard the case not only refused to punish the defendant, but thanked the doctor and apologized for having to drag him into court. The infant had spina bifida, hydrocephaly, and leg deformities. It screamed whenever touched, and no medical treatment could have kept the infant alive for more than a few painful weeks or months. After consultation with several specialists and with the parents' approval, the doctor performed the merciful act. It happened in Holland. Had the event occurred in Chicago, Los Angeles, or Tallahassee the doctor would likely fear for his life.

Nothing Looks as Good Close up as it Does from Far Away.

In 1993, Washington state adopted the *Health Services Act* with medical system reform measures much like the original Clinton plan. The law provided for a minimum benefits package, employer mandate to pay half the cost of health insurance, insurance premium cap, and a commission charged with implementing the reform law. Now all those measures are in the dumpster. In the end, business interests, the insurance lobby, the ERISA law, and a Republican House forced the Governor to sign a bill repealing the major provisions. In truth, when the rejected measures are examined, many of them look much like our medical system in Hawaii.

Thou Shalt Not Bear False Witness on Behalf of Thy Neighbor.

A woman claimed she was injured in a trolley accident in 1979. A physician testified on her behalf, but when his records were subpoenaed they failed to reveal any x-rays or note any complaints of back pain. The doctor produced some handwritten notes attesting to his care, which he claimed he made immediately after office visits in 1979. But a defense expert testified that the ink used in the notes wasn't manufactured until 1984. The physician was charge with perjury.

Addenda.

◆ C.P. Snow has observed that our culture is splitting. One side is mathematical and scientific, and it knows an immense and rapidly expanding amount. The other side is literary, articulate and political, and it knows less and less.

◆ You never get away. You only get someplace else.

◆ How do you get virgin wool? From ugly sheep.

Aloha and keep the faith—rts. ■



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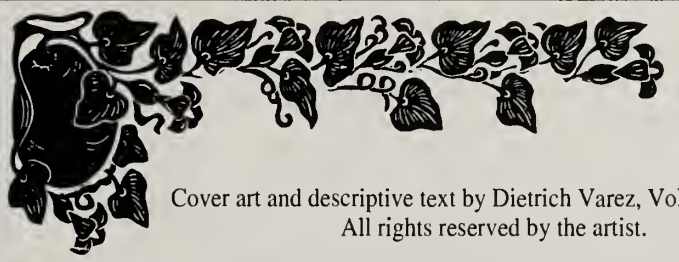
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Hina Goddess

Some say the most beautiful of all the Hinas is the goddess associated with *limu kala*, a particular kind of seaweed used in medicine and ceremony. This very beautiful Hina goddess was said to live in the sea.

Limu kala, the seaweed sacred to Hina, was the central ingredient in the *huikala* ceremony for the purification of fishermen. The priest of kahuna would bring a bowl of water containing turmeric and limu kala amid the fisherman sitting in a circle. A prayer of purification was called out.

A person suffering from physical or emotional illness was at times draped with a lei of limu kala. The patient would then enter the sea, and as the lei began to float free, the illness would drift away as well.

Limu kala is also associated with the small island of Molokini through an ancient legend.

Editorial

Norman Goldstein MD

Mahalo, Dr Ben Berg

LTC Benjamin Berg, Chief of the Pulmonary and Critical Care Service at Tripler Army Medical Center and a member of the HMJ Editorial Board, really performed *beyond the call of duty* as guest editor for last month's special issue on military medicine in Hawaii.

All too often, we don't know what is happening right next door. In recent years, the civilian and military medical communities have become so much closer. When I was Chief of Dermatology at Tripler almost 30 years ago, there was a greater amount of separation in the relations between *town and gown*, or more accurately, uniforms and business suits.

Thanks to our John A. Burns medical school with its large cadre of clinical and full-time faculty, and the excellent teaching and research facilities at Tripler, we are so much better now. Ben Berg has made a significant contribution to these efforts. Many thanks, Ben.

Our military-civilian relationships are guaranteed to further improve with the appointment of General James Hastings, former Tripler Commanding General, to the position of Chief of Medicine at our Medical School. Jim adds to the long list of military physicians who have decided to stay in Hawaii. Welcome, Jim.

In this month's issue of the *Journal*, Dr Gregory Park of HMSA's HealthPass Department responds to an editorial from former editor, Fred Reppun. (*Hawaii Med J.* 1993;52;232.) Also in this issue is an article from CPT Julius Ellis, a resident physician at Tripler, whose article on ovarian cancer was omitted from the official Tripler issue because of a shortage of space.

Mark your calendar for "Controversies in Medicine," HMA's 139th Annual Meeting on October 5 to 8 at the Hyatt Regency Maui.

HMA President's Message

Frederick C. Holschuh MD

Hawaii Medical Association was honored by the presence of AMA President Lonnie R. Bristow MD at the HMA and AMA Medicine in Transition: Strategies for Change workshop held July 23, at the Hilton Hawaiian Village. Participants spent the entire morning learning the managed care vocabulary, delivery system models, contracting issues, and legal issues. Dr Bristow reminded the audience of the bravery and determination of ancient Polynesian voyagers who, without the benefit of maps, compasses, and other modern conveniences were somehow able to locate the Hawaiian Islands in the Pacific Ocean: He noted that physicians too are capable of charting a course that will enable them to meet the challenges of the new systems emerging in Hawaii and throughout the United States. He reminded all of us that the AMA believes in a pluralistic approach to delivery of medical services and does not favor one system over another. The duty of patient advocacy is a fundamental element of the physician-patient relationship that should not be altered by the system of health care delivery. HMA has invited Dr Bristow to return for the HMA Annual Meeting to be held October 5 to 8 at the Hyatt Regency Maui hotel.

It was also my pleasure to recently install the new officers of Kauai County Medical Society: Dr Timothy Crane, president; Dr Eric Yee, vice-president; Dr Karen Ratliff, secretary-treasurer. Accompanied by Dr Roger Kimura, HMA Secretary and Jon Won, HMA Executive Director, we carried forth the message of unity and the necessity of maintaining physician leadership as we enter these changing times for medicine.

As advocates for our patients, HMA physicians are committed to seeking legislation in Hawaii modeled after the AMA's Patient Protection Act. HMA wants to ensure that injured workers will continue to have access to quality medical care. HMA has taken strong positions on the issue of nonphysician prescription privileges knowing the consequences our patients face should medication errors occur. HMA continues to conduct peer review hearings in response to written complaints from the community: Thousands of volunteer hours are given by HMA physician reviewers. HMA members generally acknowledge their preference for reviews by colleagues rather than governmental agencies without medical expertise.

HMA also recently lent its support to some hospital-based physicians when there were efforts to nullify a legitimate contract between a hospital and the physicians. Both AMA and HMA work constantly to prevent disruptions in doctor-patient relationships that business decisions in the system can sometimes produce.

HMA continues to monitor the QUEST program and serve as an active participant on the QUEST Advisory Committee. The budget cutbacks proposed by government for QUEST services is worrisome and will necessitate continued input and vigilance from phy-


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sicians.

HMA recently took up the cause of a physician investigated by narcotics agents. HMA took the cause to the AMA House of Delegates who also supported the position of fair treatment and due process.

HMA was supportive to MADD in its effort to lower the blood alcohol level for driving under the influence to 0.08. Another public health issue which has our attention is our concern regarding the consequences of tobacco use and secondhand effects of tobacco smoke.

As we look at all these new alphabet-soup organizations such as PHOs, we must remember that the *P* is not silent. The *P* or *physician* must not be silent as we are often the only advocate the patient has. As Dr Bristow stated so eloquently, whether you are a black, white, or brown doctor, or a Republican or Democrat doctor, a pro-life or a pro-choice doctor, you are still a doctor and ultimately the care of patients is your responsibility, not a financial planner's responsibility.

On the subject of managed care, I was introduced to Dr Thomas Shragg recently at a meeting, and I have asked that his *Sacramento Bee* article be reprinted in this issue of the HMJ. He says, "I'm certain this divisive non-care will be heading your way."

Now more than ever before, physicians need to be united and have as our common goal, the very best care for our patients.

Insurers Demand Silence on Myths of Managed Care

Thomas A. Shragg MD practices pulmonary and critical care medicine in Sacramento, California.

As the enrollment in managed care health plans continues to grow, a greater percentage of my patients no longer have direct access to my office. The HMOs now require that patients get a referral for every visit to see me in my specialty practice of pulmonary medicine. For many patients with advanced emphysema, chronic bronchitis, cancer or AIDS, I am the only physician whom they have seen. Consequently, these patients must now find a doctor to be their primary care physician or as the insurance companies term them, the *gatekeeper*.

Several weeks ago I was walking in the hospital hallway when I met an internist I know. I asked this well-trained, compassionate and very competent physician if his practice was open and if he could take on the primary care tasks for several of my patients. His answer was no: "I've just been audited by the insurance companies. They tell me that my profile is too high. I can't take on any of your patients; they tend to be too sick."

This physician was told by the insurance companies that he is spending too much money on referrals, lab tests, x-rays, etc. His statistical average dollar per patient expenditure was too high. Patients with chronic diseases, such as the patients I care for, are likely to need medical services. If he agrees to be the physician for these ill patients, he risks being penalized. He would like to care for these ill patients. He would be good at it. But he simply cannot afford to be a doctor for too many sick people.

Like my friend, many physicians are screening patients before

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accepting them into their practice. Patients are asked what diseases they have, what medical illnesses they suffer, what medicines they use. Digitalis indicates a heart condition. Theophylline indicates that the patient has potentially costly respiratory problems. And if the patient uses AZT...

The myth of managed care is that it encourages keeping the patients well. The reality is that too often it simply rewards a failure to accept or treat sick patients. There is a difference.

The justification for managed care is that in an era of diminishing resources, it controls costs. Unfortunately, as it cuts costs, managed care insurance plans also cut care. There simply is not enough money, we are told. Sacrifices must be made.

Ironically, the day after my physician friend reluctantly refused to take on my patients, the headlines in the *Bee* read, "Billions at issue in for-profit conversion of health plans." Clearly there is plenty of money in the system. Clearly too medical care has always been managed.

What is changing is that the physician and the patients are no longer in control of many medical decisions. We are witnessing a major shift in power. The patient no longer owns an insurance policy; rather, the patient's life is now owned and brokered by the insurer.

In the late 60s and 70s there was a general movement toward greater patient involvement in their own care. The book *Our Bodies, Ourselves*, for example, exhorted women to stop being passive, to ask questions of their physicians, to find out why a given treatment was recommended, why a certain medication was prescribed—after all, it was their health.

The system that is evolving is antithetical to this type of self-determination. Managed care is a system of forced treatment limitations. Most referrals, procedures, and even hospital stays now require approval of an often unseen insurance company reviewer. Who empowered these companies to make medical decisions, in effect to set medical policy? Whereas governmental policy decisions are open to public debate, insurance company medical decisions are not.

As reported in the *Bee*, many HMO contracts now have clauses barring physicians from publicly saying anything detrimental about HMOs. My partners were told directly by representatives of one major plan that if I wrote anything about them, our group would lose all of "their" patients. Many physicians now work as salaried employees of insurance companies, exposing them to still greater scrutiny and possible control.

We all expect physicians to render honest and unbiased medical recommendations. But it's becoming less and less likely that they can continue to act as vocal advocates for their patients.

There is nothing wrong with revamping our medical system to streamline treatment, omit needless procedures, and halt nonbeneficial practices. But we cannot leave the shaping of our health care system to bottom-liners at the insurance companies.

The health care system is in desperate need of regulatory control. Earlier this spring House Speaker Newt Gingrich called for congressional investigation of the managed care industry. There have been similar calls at the state level. But it remains to be seen whether the managed care industry can be checked.

The *Wall Street Journal* reports that insurance companies and HMOs have amassed billions of dollars in cash reserves. Recently, the head of one large insurance company made much more than $10 million in a single year. Considering the immense wealth, influence, and power of the insurance companies, can we expect that legislators will be vocal advocates for the public in setting health care policy?

Letters to the Editor

The *Journal* welcomes letters in good taste on any topic. All letters must be signed with the writer's correct signature and include the address and telepone number for our verification. Letters should be on a single subject and no longer than 200 words. Letters of any length may be trimmed.

Send to: Letters to the Editor, Hawaii Medical Journal, 1360 S Beretania Street, Second Floor, Honolulu, HI 96814.

July 25, 1995

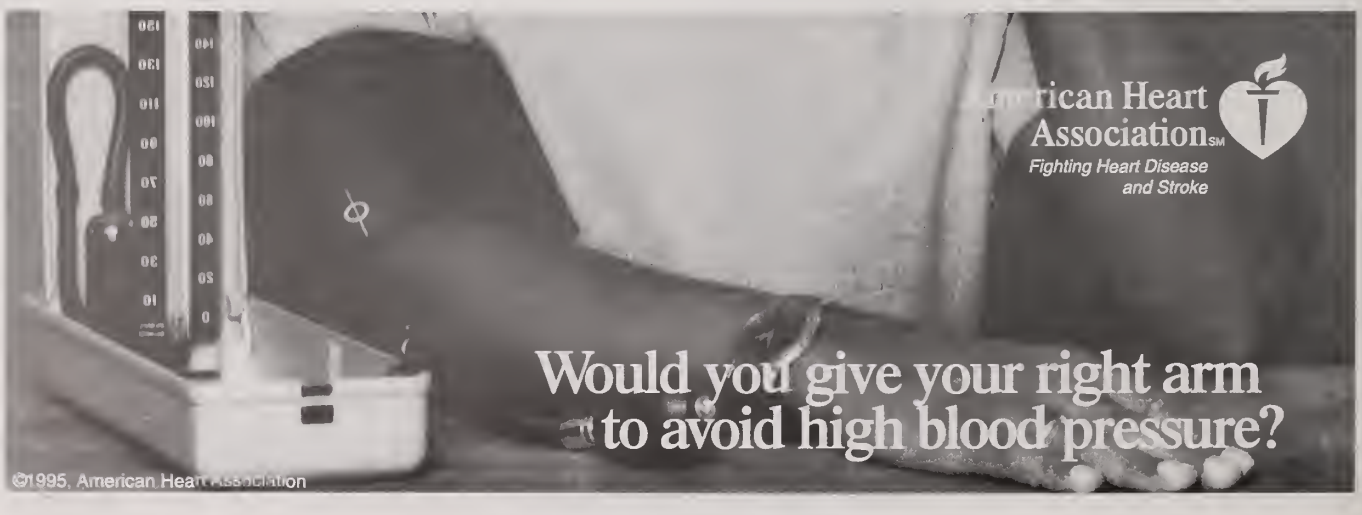
I would like to take this opportunity to express my appreciation and gratitude to the *Hawaii Medical Journal* and its staff, and especially to Dr Robert A. Nordyke for the enormous time and effort he gave in producing Festschrift: In Memory of Fred I. Gilbert, Jr, MD. My gratitude is also extended to his wife, Ellie, who ably assisted in editing articles and remembrances.

As a closure to his life, I would like to share Fred's note to family and friends on learning the nature of his illness.

Gayle Gilbert

December 9, 1994

You may have already heard that I have recently undergone a major operation for a cancer of the head of the pancreas which



produced painless jaundice, which was the only real symptom I have had thus far. Within four days of my being aware of this jaundice, I have undergone a series of tests and procedures under supervision of my colleagues at Straub which confirmed the clinical diagnosis and resulted in a bypass of the common bile duct.

While not a curative procedure, this does correct the jaundice and some of its complications. Small metastases of the primary growth were also detected in the liver at the time of surgery. I am scheduled to undergo limited radiation and chemotherapies in early January. I expect to be back at work within the next two or three weeks with the discomforting realization that survival time for cancer of the pancreas with metastases to the liver is measured in terms of months, rather than years.

Gayle and I wish that it were otherwise, particularly after having survived the malignant lymphoma five years ago which still shows no evidence of recurrence at this time. We are very happy that we have had the opportunity to share each other's lives for the past 20 years. I cannot really start to describe how important this has been to both of us. This relationship, like those with our children, other family members, and friends has been the most important part of my existence. I want to thank all of you for your willingness to be included in this group.

With love, warmest aloha, and a very merry Christmas.

Fred I. Gilbert, Jr, MD

July 20, 1995

On behalf of Senator Inouye, who is currently in Hawaii, I wish to acknowledge receipt of your most thoughtful communication of July 10, 1995, providing the Senator with a copy of the June edition of the *Hawaii Medical Journal* honoring your colleague, Dr Fred Gilbert.

Fred was indeed an outstanding individual. A truly compassionate person who cared about his patients and our nation. We will greatly miss him.

Please accept our sincerest congratulations on your special issue honoring Fred.

Patrick H. De Leon
Administrative Assistant



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Military Medicine

Military Medical Operations in Haiti

Michael T. McCormack MD
Tripler Army Medical Center

In January of this year, physicians from Tripler Army Medical Center and Schofield Barracks deployed with military units of the 25th Infantry Division to Haiti in support of Operation Uphold Democracy. LTC Michael Pasquarella MD, the 25th Infantry Division Surgeon was in charge of medical operations for the multinational force of approximately 12,000 troops deployed to maintain political stability and civil order on the island. Medical rules of engagement were established to provide medical care to the military troops and civilians involved in training and real world missions, as well as to assess, stabilize and arrange transportation for Haitian civilians requiring medical attention for conditions unrelated to military operations. In addition, medical units planned and trained for contingency operation which might have arisen from violent conflicts or natural disasters. CPT Dina Schweitzer MD of Schofield Barracks functioned as the Brigade Surgeon for the 2d Brigade, 25th Inf Div to assist LTC Pasquarella in the coordination of U.S. medical operations. Tripler physician MAJ Francis Malone MD was assigned as a Medical Officer with the Division Surgeon's Office to provide medical care at the military headquarters compound in Port-au-Prince, Camp Democracy, and MAJ Dave Mukai MD was the Preventive Medicine Officer for the multinational forces.

Tripler physicians MAJ Michael McCormack MD, MAJ Scott Belnap MD and MAJ Kenneth Batts MD, as well as Schofield Barracks' physicians MAJ Koji Nishimura MD and MAJ William Humphreys MD were assigned to infantry units of the 25th Infantry Division as Battalion Surgeons. These physicians were involved in a variety of military and medical operations across Haiti ranging from the acute care of medical emergencies encountered on military patrols to duty at the Haitian Palace as physician to Haitian President Jean-Bertrand Aristide. Medical conditions that required hospitalization or evaluation and treatment beyond the capabilities of the infantry battalion's medical resources were evaluated to the 225 Forward Support Battalion Medical Clearing Station in Port-au-Prince where MAJ Carole Buckner MD and MAJ Pamela Bostic MD of Tripler Army Medical Center and Brigade Surgeon CPT Dina Schweitzer MD were assigned. Dental, optometric and mental health services were also available at the 225 Medical Clearing Station. The 47th Field Hospital was established in Port-au-Prince by personnel from Ft Sill, Oklahoma to provide additional inpatient, as well as orthopedic and general surgical services.

Orthopedic, diarrheal, upper respiratory and dermatologic conditions were most commonly seen though endemic disease encountered by military health care providers included more exotic conditions such as leptospirosis, malaria, tropical eosinophilic pneumonia and ciguatera. Safety measures were closely followed and violent conflicts were few to make major trauma and uncommon event, though obstetric, orthopedic, ophthalmologic and general surgical conditions were evaluated and treated by military health care providers during the deployment. The experience reinforced the need for military physicians to maintain their general and emergency medical knowledge and skills, and to be prepared to practice medicine under adverse conditions.

Troops deployed from Hawaii returned with the completion of their mission in early April when the United Nations assumed command of military operations.

Medical School Hotline

The Role of Sports Medicine in Academic Medical Education

Andrew W. Nichols MD*

Sports medicine is a multidisciplinary field defined as the medicine and science that apply to physically active persons. The traditional image of the sports medicine practitioner is the high school or college athletic team physician, whose basis for selection to the position may have been his or her friendship with the coach, former athletic accomplishments, or unique willingness to stand on the sidelines. Today, the expanded scope of sports medicine practice includes physicians who not only care for elite athletes, but also those who care for youth athletes, recreational sports participants, persons with medical conditions who require special care and advice to participate in athletics, and individuals for whom exercise is a component of disease prevention and therapy.

In the past, orthopedic surgeons with their expertise in the diagnosis, treatment, and surgical management of musculoskeletal conditions, pioneered the clinical and research aspects of the specialty with the establishment of the American Orthopedic Society of Sports Medicine. The breadth of the specialty, however, has subsequently projected to primary care-trained physicians into an important leadership position in academic sports medicine.

Experts agree that the optimal medical care for an athletic squad is achieved through the team approach to athletic care. This team consists of a primary care sports medicine physician who oversees and coordinates all health care, orthopedic surgery consultants, and a panel of experts in other specialties such as cardiology, physiatry, gynecology, neurology, ophthalmology, and dermatology who have specific interests in sports medicine.

Regular physical exercise has been unequivocally shown to reduce cardiovascular disease-related mortality and play a preventive and therapeutic role in many medical conditions, such as hypertension, hyperlipidemia, diabetes mellitus, osteoporosis, obesity, and osteoarthritis. In a study that prospectively examined all-cause, age-specific death rates of persons relative to their *fitness levels*, it was determined that the *least fit* quintile of men had 2.8-fold and 3.4-fold increased risks of death when compared to the *next least fit* and *most fit* quintiles respectively. For women, the corresponding increased risks of death were 2.0 and 4.6.[1] Despite knowledge of the beneficial effects of exercise, physicians frequently neglect this form of treatment.

With the increasing physical activity of the American population, musculoskeletal overuse injury has become more prevalent. "If it hurts when you run, don't run," though once common advice from physicians, is unacceptable to many patients today. Treatment regimens should emphasize relative rest, substitution of exercise forms, rehabilitation, and preventive counseling.

Components of sports medicine can be found in all medical specialties. Examples of medical conditions associated with physical activity include exercise-induced asthma, exercise-induced anaphylaxis, athletic amennorhea, otitis externa in a swimmer, and Herpes gladitorium in a wrestler. Orthopedic

surgery, musculoskeletal medicine, family practice, and rehabilitation medicine contain critical components of an academic sports medicine education.

Medical schools typically include principles of sports medicine during required rotations in orthopedic surgery and primary care. Several postgraduate residency training programs including orthopedic surgery, family practice, pediatrics, and physical medicine and rehabilitation, require or contain sports medicine in their educational curricula. Many sports medicine fellowships are offered to both orthopedic surgery and primary care residency graduates. The educational emphasis of orthopedic fellowships is on sports injury surgical techniques, whereas the primary care fellowships focus on the nonsurgical, medical, rehabilitative, and preventive aspects of sports medicine. Other means of obtaining an education in sports medicine include on-the-job training by working with a sports team, attending CME conferences, and by reading sports medicine texts and journals.

It is unlikely that sports medicine will become a bona fide ACGME board-recognized primary specialty in the near future because of the multidisciplinary nature of the field. However, the American Boards of Family Practice, Internal Medicine, Pediatrics, and Emergency Medicine collectively have created a Certificate of Added Qualification (CAQ) in Sports Medicine. Orthopedic surgery has similarly explored the development of a CAQ in sports medicine for its board-certified specialists.

The John A. Burns School of Medicine is keenly aware of the importance of sports and recreational activities and the impact they have on the health of the people of Hawaii. In anticipation of the continued growth in this area, a Sports Medicine Fellowship curriculum is being established in Family Practice to meet the specific knowledge and skills required by our future physicians.

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1. Blair SN, et al. Physical fitness and all-cause mortality: a prospective study of healthy men and women. *JAMA*. 1989;262:2394-2401.

*Associate Professor, Department of Family Practice and Community Health
John A. Burn School of Medicine
Team Physician, University of Hawaii at Manoa

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Hawaii Medical Association's

139th Annual Meeting

October 5 to 8, 1995

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Topics to be discussed are:

- Treatment Options in the Acute Stroke Patient
- New Concepts in the Cause and Treatment of Alzheimer's Disease
- Cholesterol Confusion
- Effectiveness of Cancer Screening Programs
- Medical versus Surgical Treatment of Coronary Artery Disease
- The Role of Antiviral Therapy in the HIV-positive Patient
- The Challenges of Caring for Patients with Fatal Illness
- Historical Overview of Native Hawaiian Health Care
- Update of Hawaiian Health Care Systems
- Challenges to Collaboration
- Case Discussion: Diet and Weight Management
- Case Discussion: Asthma

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Council Highlights

July 7, 1995
Roger T. Kimura MD, Secretary

Council was called to order at 5:37 pm by President Frederick C. Holschuh.

The officers present were: C. Lehman, President-elect; R. Kimura, Secretary; J. Spangler, Treasurer; AMA Delegate C. Kam; Speaker of the House L. Howard; Vice Speaker H.K.W. Chinn; Component Society Presidents E. Bade of Hawaii; M. Joshi of Maui, T. Smith of West Hawaii; T. Crane of Kauai. Councilors: T. Au, W. Dang, Jr, P. DeMare, R. Hollison, S. Hundahl, B. Robinson, M. Shirasu, K. Thorburn, P. Kim, C. Kadooka, A. Bairos. Past Presidents: W. Dang, G. Goto, J. Lumeng, S. Wallach, and Young Physician Delegate C. Goto.

HMA Staff present were J. Asato, J. Estioko, N. Jones, P. Kawamoto, B. Kendro, L. Tong, Jon Won, and A. Rogness, recording secretary.

Dr Holschuh welcomed the newly elected president from Kauai County, Dr Timothy Crane.

Dr Holschuh described the support of physician colleagues when he presented the HMA resolution entitled *Harassment of Physicians by Narcotics Enforcement Officers* during the AMA House of Delegates. The resolution was passed to the Board of Trustees for action. Dr Dan Canete sponsored the resolution on *Human Rights Abuses in the Northern Mariana Islands* which also was well received by the AMA.

Dr Bernard Robinson, a neurosurgeon at Kaiser Medical Center and an HMA Councilor, was congratulated for his appointment to the Board of Medical Examiners.

The vice president of the Hawaii Academy of Physician Assistants, Dan Domizio, talked to Council and explained that his group would like to improve dialogue with HMA, he would provide HMA with information on how to recruit and hire PAs, and would like to see HMA involvement in the PA training program at University of Hawaii-Hilo.

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For Action

Dr Paul DeMare reported on credential verification services in Orange County, California, and it was agreed to postpone action on the HMA CVS issue until responses to the market survey are received.

HMA staff will research the cost of providing the *AMA Policy Compendium* annually to Councilors who want to purchase one.

The Medical Claims Conciliation Panel has been successful in resolving tort claims for nearly 20 years. Recently concerns have been raised regarding the cost of continuing the funding of the MCCP. HMA will request the MCCP continue to be funded unless replaced by true tort reform.

County Society Reports

Kauai.—Dr Crane said Kauai County might be interested in joining a credential verification service.

West Hawaii.—Dr Smith reported the results of a West Hawaii survey on physicians' attitudes about the benefits of HMA and AMA membership. Most respondents said they wanted to know more about HMA policy and position on issues.

Hawaii.—Dr Bade reported that the sexual assault training program for nurses was completed with about 30 RNs participating. There is an additional 40-hour preceptorship for certification.

During the HCMS meeting on June 29, an infectious disease specialist from Seattle spoke about HIV and a radiologist talked about the newest and most advanced MRI in Hawaii. Hawaii County is establishing a fund to assist the physician who was involved with the Narcotics Enforcement Office. There are plans to meet with the press regarding coverage of the incident.

The Hawaii IPA is cosponsoring a managed care conference August 19 and 20 at the Mauna Lani Bay Hotel, and all HMA members are invited.

Honolulu.—Dr Howard said the HCMS meeting at Kaiser Medical Center was successful. The HCMS is reviewing its budget and a short-term financial planning committee will meet. Vision 2000 is scheduled for September 8. HCMS is considering redistribution in an effort to make it more representative of the various districts. Plans are being discussed to divide the county society into five district branches.

For Information

- Representatives from HMA have met with Department of Labor officials with the message that HMA is prepared to work with the department on the workers' compensation issue.
- QUEST survey results were used in a letter to the House and Senate committees on Health and Human Services.
- HMA mailed a letter to the AMA about the five-year RBRVS review. Dr Holschuh thanked Dr Allan Kunimoto for his reports that had been published in the *HMA Newsletter*.
- Dr Lehman reported that the Hiroshima Prefecture Medical Association met with HMA representatives on June 27 during its biennial visit to assess the effects of the atomic bomb on the survivors.
- Dr Howard reported that as of July 1 physicians are required to ask each patient if he or she wants the diagnosis or symptom written on the prescription.

HMSA's HealthPass—A Strategy for Delivery of Preventive Services

Gregory Park MD*

Several groups have recommended standards for preventive health care services. Despite this, our health care system contains many obstacles that impede their delivery. Recognizing the need to provide members with appropriate, meaningful, and cost-effective health promotion and disease prevention services, HMSA has created HealthPass. This benefit is now available to 40% of the membership. It offers health promotion, education, and screening services through a formalized network across the state. HealthPass services are integrated with individual physician providers to offer selected periodic evaluations for adults.

HMSA's HealthPass was created to promote public health and further enable members to obtain preventive services. HMSA encourages its physician providers to participate in this statewide effort at primary health promotion.

Introduction

An important challenge physicians face is to find methods to integrate preventive care into everyday practice. The value and need for these services is well recognized, but opinions differ as to how best to offer them. Many believe the most appropriate way to deliver preventive and early disease detection services to adults is the complete annual physical exam. Doctors offer this to selected patients, assuming it will identify existing health problems. This approach has great value when abnormal findings or health risks are identified, but can be considered overkill for most. Further, there is little emphasis on patient counseling and an overall preventive strategy is often lacking. Recently, a different approach has emerged, one that combines the resources of physicians, nurses, health consultants, and insurance companies to provide a cost- and time-effective menu of selected services considered important and appropriate in preventive care.

Health care professionals understand the value of health promotion and look for an opportunity to identify or prevent risk factors or early health problems. Interventions may offer control before disease and complications develop, or at the very least, delay their onset. In today's climate of health care reform and emphasis on managed care, there are obvious benefits to incorporating preventive services into daily practice. This is more true with effective methods to control problems we discover (ie, blood pressure, diabetes, elevated serum lipids, inactivity, obesity, and smoking). Properly designed and managed programs have the potential to improve morbidity and mortality. Benefit has already been demonstrated with: 1) prenatal and well-child care, 2) immunizations, 3) blood pressure control, 4) stroke prevention, 5) cholesterol control, 6) cervical cancer detection programs.[1-4] It isn't yet clear whether or not this approach saves money.

Because cardiovascular disease and cancer are the major causes of morbidity and mortality in the U.S., preventive strategies can offer a great deal. Personal behavior and life-style play an important role not only in these but in many other health problems. Screening and early detection followed by counseling and other appropriate interventions are essential for control. For adults, a global health maintenance and clinical preventive care package should address:

- Cardiovascular disease prevention and control.
- Cancer prevention and early detection.
- Infectious disease prevention and control, including immunization programs.
- Accident and injury prevention.
- Resources for advice and counseling on life-style, physical activity, nutrition, occupational exposure, personal hygiene, behavior, and stress management.
- A formal, organized system for data gathering, record keeping, follow-up and strategic planning.

Ironically, the current health care system can be one of the greatest barriers to effective delivery of health promotion and disease prevention services. A contradiction exists. Everyone recognizes the need for and pays lip service to preventive care. However, the clinical practice doesn't get the emphasis and respect it deserves. Furthermore, it isn't implemented very well.

All the parties involved are partly responsible for the deficiencies. Government agencies offer effective immunization programs, guidelines, information, educational resources, and contribute to overall health promotions through a variety of grants and studies. For adults, however, the population on whom most of our health care dollars are spent, government offers minimal clinical resources for prevention, barely more than pneumococcal vaccinations, and more recently flu vaccinations. Health insurance companies traditionally have not reimbursed for any service unless it was related to a specific diagnosis or medical problem. Simply, they have not paid for preventive care. Perhaps the name *health insurance company* could be replaced by *medical insurance company*. Medical education places little emphasis on prevention. Physicians concentrate on disease, illness, and problems. They need to be more involved in the health promotion

*Hawaii Medical Service Association
HealthPass Department
818 Keeaumoku Street
Honolulu, Hawaii 96814

effort.[5] Further, individuals in our society, through their life-style and personal habits, could do much more for themselves to improve their health.

Barriers to Delivery of Preventive Services

Our present health care system contains various obstacles that must be overcome if we intend to deliver effective health promotion and disease prevention services. They can be attributed to practitioners, patients, and the system itself.[6,7]

Practitioner-Specific Barriers

Lack of time and distraction by other health problems.—This is often the greatest problem. Clinical training teaches doctors to place priority on urgency over importance of medical problems. Rather than long-term planning and initiating a health promotion effort, physicians focus on acute problems that, if they aren't controlled, will result in the deterioration of overall health. The assessment and treatment of conditions expected to progress slowly is postponed or overlooked until more time is available and the acute problems have been corrected. However, each day new acute problems occur. They require immediate attention and are given priority. Today's practicing physician rarely has time to return to those conditions that have been identified as important but are not acute, even though they will eventually lead to severe disease.

The typical doctor's office visit does not involve the counseling that is required for long-term behavior changes. Furthermore, doctors don't get paid for counseling or the other services important in prevention. With limited time, given the high cost of being in business, physicians justifiably may not focus on this area.

Lack of expertise.—Due to conflicting recommendations from experts, physicians may be unsure of the benefits their patients will receive from the various screening tests and preventive services. Doctors may not have the skills to perform some of the procedures. There is little training and knowledge in the area of patient counseling on life-style and behaviors that affect health are of obvious importance in disease prevention.

The problem-oriented medical record does not lend itself well to health promotion.—It is not considered a clinical problem. There is rarely a format for ongoing data entry and follow-up in the patient's medical chart, especially over time. Further, medical records are notoriously disorganized.

Lack of responsibility.—It is sometimes uncertain who is responsible for prevention in our health care system. Patients in group practices often see different doctors and multiple specialists who focus on specific problems. Preventive services are offered at multiple sites. Nonprofit organizations that offer educational resources and counseling act independently and seldom communicate or integrate their services with the primary care-giver. Thus, continuity of care is difficult, especially when patients are being treated for health problems. Multiple providers make independent requests for exams, thus redundancy can lead to unnecessary expense. Some specialists defer prevention to the primary care physician, others offer these services. A commitment by the system, organizations, and individual physicians is necessary to provide a comprehensive clinical preventive package.

The problem is not limited to private practitioners, but also affects group practices and HMOs.

Specialization.—With increasing specialization, fewer physicians provide the comprehensive, primary type of care that health promotion and disease prevention requires. The primary care specialties involved in this endeavor, ie, family practice, internal medicine, pediatrics, general practice, and Ob/Gyn, currently account for a minority of physicians.

Delayed gratification from screening results.—Physicians are most effective when they have immediate feedback. It is difficult to see the benefit hypertension and lipid control, smoking cessation, or cancer prevention efforts offer individual patients. Doctors and patients alike have a *Problems now —Results now* mentality.

Patient-Specific Barriers

Individuals in this society often avoid medical services until something bothers them. When people feel well, they often are indifferent to the possibility of serious health problems. The costs, discomfort, and inconvenience of seeking these services can delay detection of an important risk factor or disease. When complications occur, they want a *magic bullet* to somehow solve or reverse it. Individuals aren't sure of what is needed, effective, or where to go for preventive services. They expect someone to guide them. These services may be offered at several different locations and can be inconvenient. Further, a unified, patient-maintained record is not generally available or part of our present system. People believe that any important health service should be covered by insurance, which *oversees* their health care. When the insurance plan won't pay, which is usually the case when no diagnosis is involved, they aren't willing to either. The overall life-style, nutritional, and behavioral practices in this society (smoking, inactivity, overconsumption of a high fat diet, excessive drinking, and constant exposure to stress in a hectic pattern of everyday living) conflict with the types of practices necessary to achieve optimal individual health. There seems to be little willingness to change.

Health Care System Specific Barriers

America's health care system is generally delivered in a highly clinical setting that focuses on illness and disease. Inadequate support staff and facilities are available for prevention and screening. These services don't generate very much income. Few physicians, HMOs, or group practices offer a formal, well organized system for disease screening and health promotion. This is especially true for the long-term follow-up that is necessary. Counseling services are given low priority. Educational services may be offered at inconvenient times and locations. They lack interest and attendance. They are rarely used by those who need them most. Among the greatest problems is the fact that health insurance plans generally don't pay for health promotion or disease prevention services. This reduces incentives for providers to offer them and leads individuals to believe that they aren't necessary, legitimate, or important. Despite these problems, several authoritative organizations have developed guidelines and recommendations for delivery of preventive care: U.S. Preventive Services Task Force,[8] the Canadian Task Force on Periodic Health Examinations,[9] the American College of Physicians,[10-12] American Medical Association,[13] Centers for Disease Control and Prevention, American Academy of Family Physicians,[14] American Academy of Pediatrics, American Cancer Society,[15] American Heart Association,[16] Joint National Committee on High Blood Pressure,[17] and the National Cholesterol Education Program.[18] Several other individuals and organizations offer recommendations, although there are some differences in their conclusions, they agree in several areas and

emphasize that preventive services should be part of routine medical care. Currently, the favored approach is to identify high-risk individuals and offer appropriate health promotion and disease prevention services to them, rather than blindly screening large populations that have not been effective in the past. Further, they suggest that each practice select screening procedures and protocols appropriate to their situation and beliefs. Also, the concept of selective longitudinal health maintenance (ie, following individuals over time and performing periodic screening and health promotion efforts appropriate intervals) has replaced mass screening and annual adult physical exams. For a risk factor or medical condition to be recommended for large-scale screening, there is basic agreement over the criteria that must be met.[19]

- It must have a significant effect on the quality or quantity of life.
- Acceptable treatment must be available.
- An asymptomatic period, during which detection and treatment can significantly reduce morbidity and mortality, must exist.
- Treatment in the asymptomatic phase must offer a therapeutic result superior to delaying treatment until symptoms appear.
- Acceptable tests at reasonable costs must be available.
- The incidence must be sufficient to justify cost of screening.

The U.S. Preventive Services Task Force[8] identified several important findings that deserve attention:

1) Individual health practices (especially in relation to risk factors such as smoking, physical inactivity, nutrition, alcohol, and drug abuse) are the most important to focus on. This emphasizes both primary prevention (preventing a risk factor or disease) and secondary prevention (controlling problems after being discovered).

2) There is need for greater selectivity in ordering tests and providing preventive services. Frequency and content of periodic health services and screening should be tailored to the individual. Consider age, sex, physical condition, personal medical and family history, occupation, habits, and risk factor profile of the individuals. This will minimize costs and risks of screening and be more likely to give meaningful benefits. This also reinforces the need to focus on the complete medical history and a detailed discussion regarding personal health practices.

3) Patient counseling and education may be more important than the conventional approach which emphasizes clinical activities, such as physical exam and diagnostic tests. A restructuring of our priorities may be in order to address the true needs of our patients.

4) The importance of health practices and behaviors shifts the responsibility for health to the patient. Control is often in their hands. Therefore, in addition to the usual clinical skills of diagnosis and treatment of disease, doctors need to develop new skills in counseling and empowering patients to change their health-related behaviors.

5) Health care professionals must devise strategies to increase access to preventive services. These should be offered routinely to all patients and incorporated into regular visits.

6) The method and quality of clinical research toward health promotion and disease prevention needs improvement. This will help to resolve some of these questions and uncertainties that exist.

Most experts believe that screening, early detection, and health promotion efforts are justified and a good way to invest our resources, but they may not save in overall health care costs and may not reduce morbidity and mortality for some conditions. Some screening services definitely save money; others actually cost the system. The current system may lack efficiency and may not deliver preventive services effectively. Perhaps services are offered to too broad a population, rather than focusing on individuals at greater risk. Currently, preventive services account for only 3% to 5% of U.S. health care spending. As medical technology advances and the media promotes the *New techniques and miracles for diagnosis and treatment*, more people will request these services. As we expand preventive services, costs could rise significantly.

In 1988, the Blue Cross and Blue Shield Association recommended that their member plans adopt preventive guidelines and several of the "Blues" began to offer their own versions of a preventive care package.[11] There are various business considerations in the design of such a package. They include:

- A cost-containment strategy to monitor, control, and restrain rising health care costs.
- Desirability and marketability of the plan.
- Does it enhance the value of membership?
- Is it consistent with the goals and mission of the organization?

Are the services valuable to members and practicing physicians? Thus, do the preventive services:

- Advance the level of health or medical care?
- Promote the welfare of members and providers?
- Help individuals and medical providers attain their goal for optimal health?
- Meet community needs?
- Provide effective and appropriate services?
- Offer benefits that outweigh the costs?
- Enhance effectiveness of care?
- Reduce needless duplication of services?
- Encourage individual responsibility?
- Help individuals better understand and benefit from the *health care system?*

Any system designed to provide effective health promotion and preventive care services must attempt to meet these conditions, address the important health concerns most people face, and be acceptable to all the parties involved (patients, health care providers, and insurers alike).

HMSA's HealthPass

HMSA created HealthPass in response to the members' and employer groups' need for health promotion resources, as well as the individual medical doctor's desire to compete cost-effectively with the closed HMO systems. HealthPass provides:

- Risk assessment and screening for early disease detection.
- Periodic medical checkups.
- Health education and counseling.

In addition to identifying risk factors and early stage disease, the goal is to promote personal habits and a healthy life-style through proper nutrition, exercise, accident and injury preven-

tion, periodic checkups, and behavior changes. Identifying abnormal conditions at the asymptomatic stage will increase likelihood for control or reversal of these problems. The ultimate goal is to reduce morbidity and mortality and to improve quality of life and the everyday health of the participants.

HealthPass is a benefit of the Preferred Provider Plans, which includes the state and federal members. Members and their covered spouses are eligible for health screening appointments which can be scheduled at various locations including Honolulu, Aiea, Kahului (Maui), Lihue (Kauai), Hilo and Kona (Hawaii). Periodic mobile screenings are offered on Lanai and Molokai. Members are notified on the subscriber's birthday and invited for an appointment. They complete a health questionnaire, which helps create a risk profile focusing on nutrition, self care, weight control, personal life-style, behavior, and history. Members then meet with a health consultant who performs an abbreviated medical history, further focusing on health history, risk factors, family history, cardiovascular disease, breast, colon and gynecologic cancers. Primary screenings also include anthropomorphic measurements, blood pressure, percentage of body fat, cholesterol, glucose, and fecal occult blood tests. If the cholesterol is between 200 and 240, an HDL measurement is performed. A flow-sheet model is followed such that, if indicated from test results, members are referred for secondary screenings or to their primary physicians. Members receive individual counseling and a health action plan is created. If necessary, arrangements for further follow-up and support are made. For their records and future reference, a simplified report booklet is given to the participating member. Depending on the results of the risk assessment, history, and primary screenings, members may be eligible for secondary screenings. Depending on their age, history, and personal risk factors, they may receive one or all of four secondary screenings, which include:

- Health maintenance physical examination.
- Screening mammography.
- Pelvic exam and Pap test.
- Screening proctosigmoidoscopy.

Based on the type of service, office location or convenience, participants select from a panel of providers. Results of the secondary screenings are sent to HealthPass. Should they be abnormal, members are contacted by telephone and certified mail to ensure they understand the significance of the findings and can follow-up with their personal physician. At the member's request, a copy of the screening report is sent directly to their personal physician. Following the HealthPass encounter, members are asked to complete a customer satisfaction survey. HMSA's marketing department evaluates responses independently. This feedback helps to determine the value of this program. Participants pay half the cost of services (with the exception of mammograms, which are covered at 100%), when they are referred for additional screenings.

Below are the secondary screenings offered and for whom the benefit is available (Table 1).

HealthPass participants receive between 60 and 75 minutes of health promotion and screening services annually. Approximately 40 minutes are spent with the health consultant, while 20 to 30 minutes are spent with the physician during secondary screenings. The focus is to increase the individual members' health awareness, identify any significant existing risk factors or outcomes, and to educate and counsel them on life-style and behavior that will affect their future health. With repeated visits, serial information is accumulated to further the health of participants. HealthPass is now in its fourth year of operations. Participation has increased every year and member satisfaction is high. In addition to providing members with important health promotion, early screening, and disease detection opportunities, the focus now is to create descriptive statistical studies and clinical research attempting to answer specific questions relating to risk factors, screening results, and outcomes.

Results

Between 1990 and the third quarter of 1993, a total of 20,984 HMSA members have undergone health risk appraisals, screening, and individual counseling sessions. This includes 4,858 repeat participants. Figure 1 demonstrates the significant growth

Fig 1.—HMSA's HealthPass 1990—Third Quarter, Participation by sex

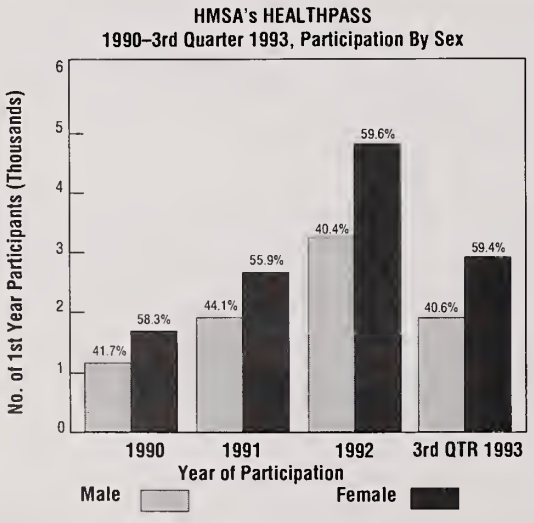


Table 1.—Health Maintenance Examination*

Age	Number of Exams
19 to 30	1
31 to 40	2
41 to 60	1 every 3 years
61 to 65	1 every 2 years
66 and older	Annually

*A hearing and vision tests performed by health consultants with every health maintenance exam.

Table 2.—Mammography, Sigmoidoscopy, FOBT, Pelvic and Pap Tests

Test	Risk Level	Age of Member			
		18 to 34	35 to 39	40 to 49	50+
Mammogram	High	as per PMD	Baseline	Every 2 yrs	Annual
	Average	n/a	Baseline	Every 3 yrs	Annual
Sigmoidoscope	High	n/a	1 every 3-5 yrs	1 every 3-5 yrs	1 every 3-5 yrs
	Average	n/a	n/a	n/a	1 every 3-5 yrs
Pelvic & Pap test	High	Annual	Annual	Annual	Annual
	Average	Annual x3, Class I then every 2 yrs	Annual	Annual	Annual
Fecal occult blood test	High	Annual	Annual	Annual	Annual
	Average	n/a	n/a	Every 2 yrs	Annual

over three years. This can be attributed to the addition of state and federal plans and continued growth in the managed care plans. Sixty percent of participants are women and 40% are men.

Figure 2 illustrates the age distribution of HealthPass participants. Approximately 10% are younger than age 30. Fifty-five to 60% are between ages 30 and 60, and approximately 25% to 30% are older than age 6 1. Many participants may otherwise not see physicians regularly. The smaller percentage past age 60 may be because these individuals are more likely to be seen routinely by their personal physician and may not perceive need to use HealthPass.

Figure 3 illustrates the education levels of the HealthPass participants. Approximately 70% have college-level and graduate education degrees. Twenty percent are graduates of high school only and 10% are graduates of trade or vocational schools. Perhaps the higher education level has fostered greater health promotion consciousness, making these individuals more aware of and willing to seek preventive services. Further, Figure 3 demonstrates that approximately 65% to 70% of participants white-collar workers, whereas only 10% are in the blue-collar category, and less than 10% are homemakers and students. Approximately 20% are retired. This data suggests that the white-collar employment groups either have greater interest and awareness of the health promotion activities that HealthPass provides or have schedules flexible enough to enable them to utilize the services.

Figure 5 illustrates the risk factor profile of the average HealthPass participant as measured by the Staywell health risk appraisal software program, which gauges these risk factors on a scale of 0 to 10 (10 reflects the best score). The average HealthPass participant scores in the 6 to 10 range, further suggesting their awareness and concern for healthy behaviors and willingness to engage them. Alternatively, the average HealthPass participant may be exaggerating his or her healthy behaviors and underestimating unhealthy activities. It is noteworthy that the lowest score consistently was in the exercise category. The sedentary life-style of the average American is one of the greatest preventable health risks that exists. This is no exception with the HealthPass participant.

Virtually 100% of participants received counseling session with health consultants. The focus is on life-style and behavior affecting health status and more specifically directed toward risk factors known to predispose to coronary artery disease, cancer, and diabetes. Emphasis is on nutrition and weight control, recommending a high fiber, low-fat diet, regular exercise, self-care, control of alcohol consumption, smoking cessation, and stress management. The average HealthPass participant does not smoke; thus, counseling on smoking cessation was necessary for a minority of individuals.

Of the total participants in three and a half years, there were 6,489 (32.6%) with abnormalities requiring follow-up and monitoring by HealthPass consultants. This was usually for such risk factors as borderline cholesterol levels between 200 and 240, stage one or two hypertension, or a mildly elevated glucose in the 115 to 140 range. Of these, 2,332 individuals (11.7%) were referred to their primary physicians for followup of the abnormalities discovered. The criteria for these referrals was established by an algorithm. Health consultants follow another algorithm, based on age, sex, personal history, risk factor profiles, family history, and past medical history, to determine eligibility for secondary screening provided by the HealthPass physician panel. There were 930 people referred for physical examinations. Of these, 225 (24.2%) had abnormalities. There were 3,361 mammograms performed, of which 446 (13.3%) were abnormal. In addition, 1,832 pelvic examinations and Pap tests were performed, with 214 (11.7%) abnormal; and 838 sigmoidoscopies were performed, with 150 (17.9%) abnormal.

Further data analysis is ongoing. Measures such as body mass index, body-fat percentage, waist-to-hip ratio, total cholesterol, mammogram results, specific stages of hypertension and their association with each other and other health risks are being evaluated.

Satisfaction questionnaires are distributed to participants. They address issues such as ease of scheduling appointments, whether or not they thought this was an important benefit, satisfaction with services, plans to continue, recommendations to friends, and overall satisfaction. The level of satisfaction ranged from 95% to 98%.

Fig 2.—HMSA's HealthPass 1990—Third Quarter 1993, Participation By Age

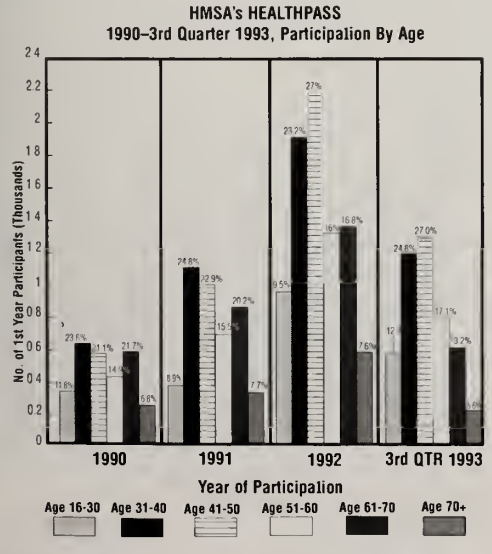
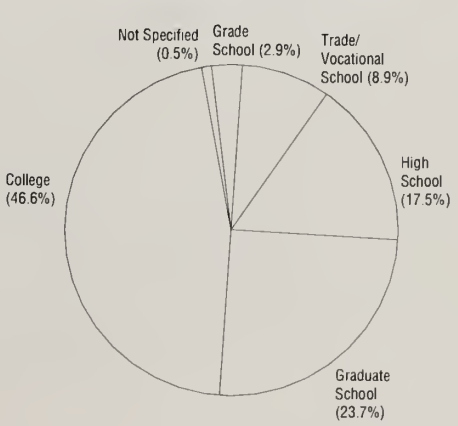


Fig 3.—HMSA's HealthPass Participation Profile (Through 9/30/93)



Future Direction

In the future, HealthPass intends to expand important disease prevention services with: 1) a fitness evaluation, 2) osteoporosis evaluation, 3) prostate-specific antigen (PSA) testing, 4) LDL screening, 5) an adolescent module, 6) an occupational health module.

Most of the HealthPass participants are of a higher socioeconomic class, with middle-management and upper-level management occupations, and a higher education level. These people seem to be more aware of life-style and personal habits that affect their health and score well in their health risk profile. A future focus will be to attract more people from lower to average socioeconomic groups who have greater health risks, as well as to ensure that all ethnic groups are participating in preventive screening, educational and counseling services. It is clear that employers need to be more involved in the process of screening and overall health promotion. As the effectiveness of preventive services is further substantiated through trials and experience and the quality of these services is perceived as high, more individuals will utilize them.

In addition to the above-stated goals, HealthPass intends to support the private practice of medicine and to complement the services provided by physicians. Literature reports suggest that preventive services can be delivered appropriately only by developing and adopting a formal system. This process usually requires a team approach with all members (ie, participants, the HealthPass staff, physician provider network, and private personal physicians) being essential elements in this health promotion process.

Preventive services must be offered in the same manner as other medical and health services. Baseline information is obtained through careful, detailed personal and medical history that focuses on family illness, personal habits, risk factors, and personal concerns. From this, an analysis of health risks based on needs, technical, and biochemical screening evaluation is performed. Data is accumulated longitudinally, using appropriate selected interventions depending on the individual circumstances. This provides individual screening depending on personal needs and circumstances. Obviously, much input comes from population studies and risk factors likely to affect the individual. The need to personalize preventive services cannot be overemphasized. This is what the authorities, such as the USPHTF, ACP, CDCP, and CTF have recommended as most appropriate and cost-effective. This will not overburden our current system or tax our resources. Practically, this seems to be the best way to proceed toward providing preventive services.

Discussion

Doctor Reppun has expressed concerns over HealthPass.[21] While acknowledging the approach is reasonable, he rightly notes that the comprehensive history taken by a physician skilled in the process, especially as it pertains to a careful review of systems supplemented by a physical examination, is necessary to perform a total health review. The HealthPass preventive care program doesn't intend to replace this process. Rather, the goal is to provide a basic preventive package based on rational nationally accepted guidelines, operated reasonably, and focused on meaningful, cost-effective objectives. It is fashioned from the recommendations of the medical colleges and the many task forces on preventive care. The information acquired in the process will complement the existing medical database of participants and help provide important education services. Further, HMSA is utilizing the existing services of physicians and other medical care providers and is supporting private practice.

Physicians generally believe they provide effective preventive care. However, our current health care system is not an ideal environment for implementation and delivery of preventive services. This article describes many of the obstacles in our current system that impede this effort. A formal strategy, and delivery systems such as HMSA's HealthPass, is a useful tool to provide the team approach necessary. Team members must function independently and also cooperate as a group to achieve success. HealthPass offers services that meet member's needs and support the private practice of medicine. HMSA participating physicians are encouraged to become members of the panel of HealthPass providers. This not only gives them the opportu-

Fig 4.—HMSA's HealthPass Participation Profile (Through 9/30/93)

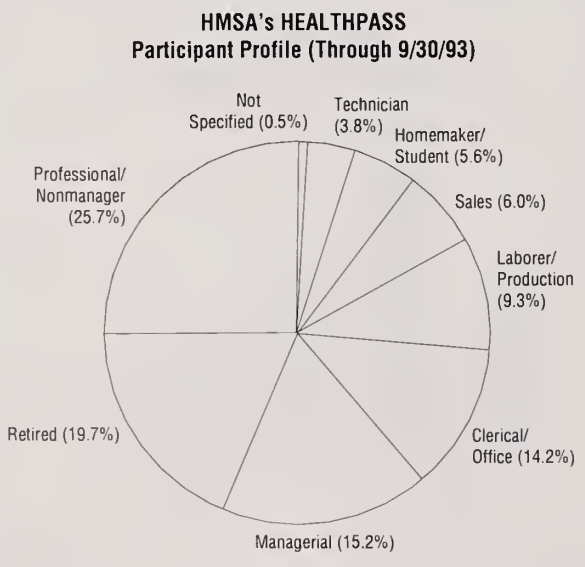
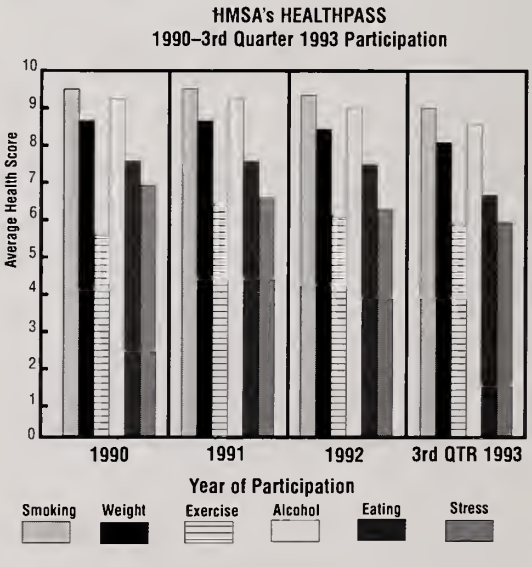


Fig 5.—HMSA's HealthPass 1990—Third Quarter 1993 Participation



nity to perform the secondary screening examinations on their own patients, but also serves as a source of new patient referrals. HealthPass participants often do not have primary physicians, which is one of the reasons why they utilize these services in the first place.

Everyone can benefit from this system of offering health promotion services. Patients have access to preventive services, educational resources and an organization that follows them over time. Doctors participate in a cooperative effort while others do much of the legwork and follow up. It also becomes a practice builder and can result in physician visits that otherwise may not have occurred. More important, HealthPass is one of the few opportunities whereby a clinical interface can occur between the health insurance companies and providers. Insurance companies should benefit as members receive health advice and counseling to reduce the incidence of disease and participate in early detection services. Theoretically, this should reduce the overall cost of care. Further, they can maintain some control and oversight over the preventive services provided and can see that they follow established national guidelines. A component of cost control exists as well. With more experience in the delivery of these health promotion and preventive services, and as we improve on this formal system to offer them, existing problems will be overcome, resulting in more effective disease prevention for members. HealthPass depends on the primary care physician to play a central role in this partnership for preventive care.

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Fred Reppun's September 1993 Editorial—HMSA

HMSA has often come up with innovative projects. One of these is not new: The establishment of clinics, mostly in out-lying areas of the state, with salaried physicians in primary care facilities that are purchased or leased, staffed and fully equipped.

The other is new—introduced to physicians by a letter dated March 1, 1993 announcing HMSA's HealthPass.

The former has run into opposition on the part of physicians who feel that HMSA is competing with its own base of PARs (participating physicians) and particularly with *non-PARs*, physicians who do not conform to the fee-for-service schedule of charges set by HMSA. The State Legislature has passed bills to restrict any expansion of such programs initiated by any mutual insurance company. Pressure is being put on the Governor to veto the legislation (and he did).

The pro side of the project claims that such clinics emulate what the federal government is already supporting—federally funded comprehensive primary care, comprehensive family health clinics such as Waianae Coast Comprehensive Health Clinic, Kokua Kalihi Valley, and some 5 or 6 others. These serve a need for medical and preventive care for certain populations that otherwise cannot or would not seek access to private physicians.

In a sense HMSA's clinics perhaps foretell the future: *Managed care*, which is now in the eye of both state and national focus.

The new HMSA proposal, Health Pass, is also food for thought. As usual, it is really not very new—it has been in existence for the past 3 years! HMSA states that "over 19,200 screenings have been provided ... at our HealthPass facilities" during that time.

"HealthPass is a wellness program for adults which includes a health risk appraisal, standard screening tests and the evaluation and development of a Lifestyle Action Plan." Providers have to agree and sign up to participate. Patients have to agree to pay half the cost.

We have a concern about the payment to the provider, not in terms of the dollar amount so much as what it does to the patient. Granted that it may bring the adult into the office, at least for a modicum of preventive care. But very few people ever consider seeing a doctor when they are well, and even if they do, they almost always have one or more complaints.

Even to evaluate a long-established patient's health status once a year takes at least 45 minutes to an hour depending on the complexity of the case. A 15-minute quick history and cursory physical exam may very well give the patient a false sense of "all's well with me" at an out-of pocket fee of $26 (HMSA pays for the other $26 for a total of $52). We would not call that good practice.

On the other hand, it might well alert the examining doctor, if he or she is unusually perceptive and not overburdened, sleepy or tired, to something seriously wrong with that patient. We recall the old dictum: "Every doctor's office is a cancer detection clinic."

When one stops to marvel that in all the prior years of the existence of the insurance against medical illness and injury, no carrier would ever cover annual physicals for adults. This program by HMSA is truly a forward step. One of the reasons it was never covered previously was the fact that the annual physical could always lead to findings that would entail coverage by the insurance carrier for genuine diagnosis of unexpected and unanticipated illness, which would cost the carrier.

In essence then, HMSA's HealthPass is a welcome breach in that barrier, and it is indeed a step in the direction of preventive care—if people will be responsive and responsible!

J.I. Frederick Reppun MD

Squamous Cell Carcinoma of the Ovary

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Benign cystic teratoma is a very common ovarian lesion; and it commonly occurs during a woman's reproductive years and most often is benign. In approximately 1% to 2% of cases, however, it can undergo a malignant transformation with a very poor prognosis. This is especially the case when disseminated disease is present. Usually the associated malignancy is squamous cell carcinoma, and radical surgery is recommended.

An American Samoan woman was air-evacuated to Tripler Army Medical Center for further evaluation and therapy after having undergone an exploratory laparotomy and right ovarian cystectomy. Her pathology at the time of her initial procedure revealed a mature cystic teratoma with a malignant degenerative component. Her diagnostic evaluation upon arrival was unremarkable except for her physical exam and pelvic CT. She subsequently underwent a radical surgical procedure to include a surgical staging procedure, revealing disseminated squamous cell carcinoma with FIGO stage III disease.

Whereas malignant transformation of a benign cystic teratoma is a rare occurrence, a high index of suspicion should be maintained whenever a preoperative diagnosis is encountered; a radical surgical approach with en bloc resection should be employed. Adjuvant therapy with radiation or chemotherapeutic agents in general has not been shown to improve the outcome, especially in disseminated disease.

Benign cystic teratoma, also known as a dermoid cyst, is a common lesion of the ovary. Among the group of tumors referred to as germ cell tumors, it is the most common and probably accounts for approximately 25% of all ovarian tumors.[1] It is notable for occurring most commonly in women in their reproductive years, and also for the fact that it is very often bilateral 10% to 15% of the time.[1] Since it originates from totipotential cells that have the ability to differentiate into mature derivatives from all three embryonic cell layers, ectoderm, mesoderm, and endoderm, it often can be found to harbor hair, bone, teeth, skin, etc, upon macroscopic and microscopic evaluation. It is usually benign and usually requires simple excision without any adjuvant therapy, however, in approximately 1% to 2% of cases, it can undergo malignant transformation.[2-3]

In the literature, there has been only several hundred reported cases in which malignant transformation has occurred in the presence of dermoid cysts. These reports, usually found in older women, most often describe lesions confined to the ovary itself or lesions without any metastasis. However, we report a case in which this lesion was found to have metastasis throughout the peritoneum, ie, FIGO IIIC disease.

Case Report

A 47-year-old woman from American Samoa was transferred to Tripler Army Medical Center for staging and therapeutic evaluation. On December 30, 1993 in American Samoa, she had complained of a several-week history of lower abdominal pain and distension. The review of her systems was otherwise unremarkable, as was her past medical history, social history, or past surgical history. At the time of her exam, she was noted to have a large abdominopelvic mass, later found sonographically to be a large, loculated cyst. On January 31, 1994, she subsequently underwent an exploratory laparotomy and left ovarian cystectomy. The pathologic diagnosis of the large ovarian mass was "mature cystic teratoma with a squamous cell carcinoma component," and she was air-evacuated to Tripler Army Medical Center.

At Tripler Army Medical Center, a thorough diagnostic evaluation revealed a hematocrit of 33.9%; a CA-125, AFP, CEA, and quantitative HCG were all within normal limits; normal electrolytes; and normal liver function tests. Her electrocardiogram demonstrated a normal sinus rhythm. A flexible sigmoidoscopy revealed a normal colonic mucosa through 60 cm and her Pap test was within normal limits. Radiologic analysis was notable for a normal mammogram and chest x-ray, but a CT scan revealed: 1) soft tissue infiltration of the mesenteric fat with multiple discrete masses consistent with peritoneal carcinomatosis due to metastatic ovarian malignancy; 2) probable right ovarian teratoma; 3) probable bilateral lower lobe scarring with bronchiectasis, but cannot rule out a malignant infiltrate in the region.

On March 21, 1994, she underwent an exam under anesthesia, exploratory laparotomy, modified radical hysterectomy, right salpingo-oophorectomy, resection of mesenteric nodules, appendectomy, omentectomy, pelvic aspirates and washing, and a Smead-Jones closure. The findings at the time of surgery included, "...a mass (on exam under anesthesia) that appeared to go to the umbilicus; multiple adhesions between the anterior abdominal wall and the bowel; a large 8x6 cm mass involving the omentum, large bowel, and small bowel; multiple very small nodules arising from the small bowel; uterus densely adhesed [with] tumor extending up the left infundibulopelvic ligament and the left round ligament; tumor involving the right tube and ovary and right parametrium; and multiple other filmy adhesions between the liver and the diaphragm." She tolerated the procedure well and progressed through an uneventful postoperative course without complication. Prior to her discharge from the hospital, she was thoroughly counseled via a translator about

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her postoperative therapeutic options: to include adjuvant chemotherapy or no further intervention. She elected to return home in order to discuss the prospects of further therapy with her family and was discharged in stable condition on March 25, 1994 with instructions as to when to return for staple removal and other appropriate disposition.

Her pathologic evaluation was notable for a right pelvic peritoneal mass, multiple omental nodules and masses, multiple pelvic biopsies, and a sigmoid colon nodule, involved by "infiltrating, moderately differentiated squamous cell carcinoma" (Fig 1). However, pelvic aspirates, pelvic washings, diaphragmatic scrapings, an appendix, and a small bowel nodule were all free of disease.

Discussion

Benign cystic teratomas are among the most common ovarian tumors reported. They usually occur during the reproductive years and are most commonly unilateral. Since they are derivatives of all three germ cell layers, many different types of mature tissues can develop. In the rare instance where these tumors have a malignant transformation, the most common malignancy is squamous cell carcinoma.[5] However, a review of the literature reveals authors who report other types of malignancies in association with degeneration, ie, adenocarcinoma, melanoma, and osteosarcoma.[6-8] Moreover, another group has reported a squamous cell degeneration "...in which endometriosis is the favored origin."[9] Nonetheless, this discussion will be limited to squamous cell degeneration.

There are several potential origins for the squamous cells involved in this degenerative process. However, since epidermal cells are almost always found on histologic evaluation, they are probably at the root of the etiologic process.[2] Moreover, it is important to note that it is not the size of the lesion that contributes to the poor prognosis for patients in which malignant degeneration is found.[10] A literature review and meta-analysis conducted by Krumerman and Chung in 1977 compared tumor size and prognosis, and they conclude, "...there was no significant correlation between tumor size and subsequent course..."[10] To the contrary, the association with poor prognosis and indolence seems to be more closely associated with whether or not the tumor extends through the ovarian capsule.[2,9,12] Whereas patients with stage I disease have survival rates reported to be as high as 76% in some series,[3] stage III and stage IV disease "...have a uniformly bad outlook," with patients with FIGO stage II to IV having survival rates of slightly greater than 11%.[3] As it was stated by Ribeiro et al, "...stage I cases are the only survivors." Most series attribute "...direct continuity and peritoneal seeding..." as the main means of the spread of a tumor, although the finding in at least one case of spinal metastasis demonstrates that hematogenous spread probably also occurs in some instances.[11]

Finally, since malignant degeneration of these tumors occurs so rarely, it makes recommendations for therapy very difficult, and this difficulty is certainly reflected in the literature. In stage I tumors in which the disease was confined to the ovary, several series have realized favorable results with surgery alone or postoperative radiation therapy and/or chemotherapy.[3] Most authors agree that radio-chemotherapeutic modalities have made no significant impact in survival in patients with more advanced disease.[4,10,12] Ribeiro et al employed two commonly used chemotherapeutic regimens with no significant long-term response, ie, cisplatin, etoposide, and bleomycin (PEB), and vincristine, actinomycin D, and cyclophosphamide (VAC).[4] Nonetheless, as far as surgical therapy is concerned, the goal should be to remove as much of the diseased tissue as possible while avoiding cyst rupture even if this requires draining the cyst initially, since "...partial resection followed by postoperative radiation and chemotherapy does not seem to improve the outcome...[11] To this end, Pantoja et al champion radical surgery as the procedure of choice involving "...en bloc resection of the cyst with all the adherent viscera...", after an initial positive tumor margin of the cyst wall on intraoperative frozen section.[11] This radical surgical approach is also recommended by Amerigo et al.[2]

We present a case in which tumor had spread outside of the ovary and radical surgical therapy was performed. Most cases in which malignant squamous cell degeneration was found in association with a mature teratoma occurred in older patients and with disease that was contained within the ovary itself. It is relatively uncommon for these tumors to present with FIGO stage IIIC disease. Our patient was offered adjuvant radiochemotherapy as a possible form of postoperative treatment although she was also counseled that the benefits of such were as yet unproven. She returned to American Samoa in stable condition to discuss further therapy with her family.

Finally there are several conclusions that can be drawn from the aforementioned case and review, supported to a great extent by the literature, and which should come into play whenever these lesions are discovered. It is important that appropriate staging be undertaken whenever these lesions are present. Many authors recommend performing intraoperative frozen sections, and when positive for malignancy, a radical en bloc procedure should be performed, with the exception of a lymph node dissection. These lesions are most commonly found in older, postmenopausal women, however, in rare cases they also can be detected in younger women. Radiation therapy and/or chemotherapy has been shown to be of little benefit in improving the survival rate, especially in patients with advanced disease, and any use of them should be considered to be only experimental at best until further study can be undertaken. However, for patients with stage I disease, some authors have supported using a similar approach to that of similarly staged squamous cell carcinoma of the cervix with mixed results at best.[3] Next, whether or not the lesion has extended beyond the ovarian capsule is the most important prognostic indicator for long-term survival, ie, the more invasive, the worse the prognosis. Nonetheless, it goes

➤ *Continued on page 707*



Fig 1.—Photomicrograph demonstrating a high-powered view of representative neoplastic squamous cells with irregular chromatin clearing, abnormal mitoses, increased nucleus-cytoplasmic ratio, and glassy eosinophilic cytoplasm.

News and Notes

Henry N. Yokoyama MD

Lecture Notes

Advances in Diabetic Nephropathy was presented by Sharon Anderson MD, Associate Head, Division of Nephrology and Hypertension, Oregon Health Sciences University, jointly sponsored by National Kidney Foundation of Hawaii, Tripler Army Medical Center, and Amgen at the Pacific Club, May 25, 1995. Introduced by Roland Ng, newly elected Hawaii Kidney Foundation president.

Diabetic Nephropathy

Introduction

- Leading cause of ESRD
- Annual cost of treatment: $28 billion
- Increases cardiovascular death risk by 100% over nondiabetic, and 8 times over diabetics without nephropathy.

Principles of Management

- Look for it. (Anticipate complications)
- Find it. (Diagnose early)
- Treat it. (Intervene aggressively)

Early Detection

Urinary albumin excretion (UAE)

- Onset and significance of UAE.—Occurs more than 5 years before initial dx of IDDM; may be present at dx of NIDDM: ie, UAE is earliest clinically detectable renal disease; early marker for increased cardiovascular mortality.
- UAE (albumin excretion mg/24°): Less than 30 mg=normal; 30 to 300 mg/24°=microalbuminurea; more than 300 mg/24°=persistent proteinuria (diabetic nephropathy).

Intervention

Optimal Glucose Control

DCCT findings: (With intensive treatment of 1441 type I diabetics)

- 76% less retinopathy
- 60% less neuropathy
- 39% to 44% less albuminurea

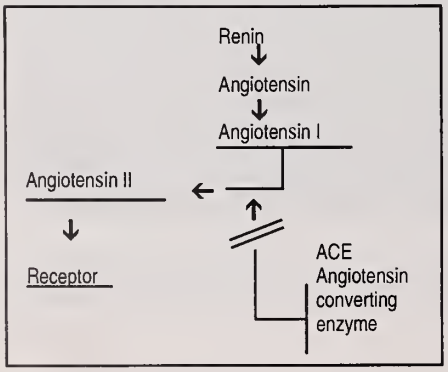
Dietary Protein Restriction

Reduced protein intake 0.6g/kg/d (-40 gm)
ADA recommendation: 0.8g/kg/d (-60 gm)

Antihypertensive Rx

- ACE for BP and albuminurea in diabetics (Type I with microalbuminurea did not progress as rapidly to nephropathy with Captopril) (409 type I patients on Captopril 25 mg tid for 3 years: only 18% doubled their serum creatinine on Captopril; 30% doubled their serum creatine on placebo).

Type II Diabetics on ACE Inhibitors



- Angiotensin IIA (Losartan, Merck): Less cough than ACE.
- Calcium channel blockers. All calcium channel blockers are not alike.
- Comparison of Nifedipine and Diltiazem shows increased UAE with Nifedipine and decreased UAE with Diltiazem.

Metanalysis of Antihypertensive Drugs in Diabetics

Drug	MAD	% proteinurea
Diuretics and Beta Blockers	-10	-23
ACE	-12	-45
CCB		
All CCB	-12	-17
Nifedipine alone	-13	+5
All without Nifedipine	-11	-35

Caution: ACE can cause hyperkalemia and cough. Losartan with less cough may be alternative. Otherwise Diltiazem may be a third choice.

*Sharon Andersen prefers long-acting ACE, lisonapril instead of Captopril.

New Tactics for Type II Diabetes: Combined Treatment Regimens

Matthew C. Riddle MD, Associate Professor of Medicine, OHSU; Head, Section of Diabetes.

The following notes are gleaned from Matthew Riddle's paper and his lecture at Kaimana Hotel on April 4 (Sponsored by Pratt Pharmaceuticals).

Glycemic Control and Diabetic Complications

- DCCT shows prospectively that intensive management of type I reduces retinopathy, neuropathy, and nephropathy by 50% to 80%.
- Linkoping (Swedish) study concludes that nephropathy in all type I diabetes was reduced by 80%.
- Wisconsin study shows that HbAIC elevation in both type I and type II predicts high cardiovascular mortality.

Glycemic Targets

- DDCT shows a continuous relation between A1C and complications with no protective threshold ie, a drop of A1C from 12% to 10% is just as beneficial as a drop from 9% to 7%.
- Fixed glycemic targets
 - –DCCT and Linkoping studies: A1C of 7.1%.
 - –Wisconsin study: retinopathy increases with A1C greater than 8.1%.
 - –Kuopio study: cardiovascular mortality increases with A1C greater than 8.0%.
 - –ADA recommendation: corrective action necessary with values greater that 8.0%.

Natural History of Type II

Type II is strongly inherited, gradually progressive over decades, and is present 5 to 10 years before diagnosis.

Complications are present at time of diagnosis.

Available Treatments

- Diet
- Exercise
- Sulfonureas
- Insulin
- 1995: Metformin
- Each of these treatments succeeds at first and loses efficacy over time.

Secondary failure a/c with sulfonureas, diet, insulin, and metformin. Five years of success with a given regimen is reasonable.

Single Drug Therapy

- Sulfonureas
 - –Raises basal secretion of insulin and lowers basal FBS.
 - –Lowers fasting hyperglycemia but no effect on postprandial hyperglycemia.
 - –Therefore, A1C values are not normalized completely.
- Nonintensive insulin
 - –Lowers fasting hyperglycemia, but little effect on postprandial hyperglycemia.
 - –Raises circulating insulin
- Metformin
 - –Enhances action of insulin on liver, muscle, and adipose tissue.
 - –Lowers triglyceride levels and reduces body weight. Lowers hypertension.
 - –Reduces circulating insulin.

Combined Regimens

UKPDS concludes that sulfonylureas, insulin (nonintensive) and metformin are effective early in the natural history of type II. Secondary failure occurs at the same rate with each therapy. When single-drug therapy fails, there are two ways to control:

- Intensive insulin therapy (ie, multiple injections and two kinds of insulin).
- Combining 2 or 3 of these single treatments, eg,
 - –Sulfonylurea/metformin
 - –Insulin/sulfonylurea
 - –Insulin/metformin
 - –Insulin/sulfonylurea/metformin.
- Sulfonylurea/metformin: Metformin (2500 mg/d with full dose glyberide); lowers FBS 80 mg/dl and lowers A1C 2%; Metformin causes nausea and diarrhea with full dose; therefore, use 500 mg tab ac 3 times a day.
- Insulin/sulfonylurea: 1) Single eve insulin plus sulfonylurea: lowers FBS 30 mg/dl and A1C 1% (Insulin:70/30 insulin before dinner). 2) Multiple insulin is no better than single injection combined regimen; causes weight gain and higher plasma insulin levels.

Future: Acarbose for postprandial hyperglycemia: slows digestion and decreases absorption of complex CHO and lowers postprandial hyperglycemia.

Practical approaches: Patients with A1C

7.5%=too high; A1C greater than 8.0%=urgent.

• Sulfonylureas starting doses: 1) Glyburide 2.5 mg, 2) Tolazamide 125 mg, 3) Glucotrol 5mg XL

–Increase dose to 1/2 the maximum dose, ie, Glyburide 5 mg bid; Tolazamide 250 mg bid; or Glucotrol XL 10 mg/d.

• Metformin: start with 500 mg before breakfast for 1 week; raise to maximum 500 mg ac 3 times a day.

• On failure of single agent (A1C 7.5% or greater) add second oral agent.

• When oral treatment fails, add evening dose of insulin to the oral agents.

1) For nonobese patients, give NPH insulin 5 to 10 units HS and increase gradually to achieve FBS less than 120.

2) For obese patients: use 10 units of insulin 70/30 before dinner and increase dose gradually: objective being A1C less than 8.0%.

• When no longer possible, consider multiple injections of insulin.

Squamous cell carcinoma of the ovary

(Continued from page 705)

without saying that some generalities exist, and each case should be handled individually, including the patient and her family in the process, as was done in our case.

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The Weathervane

Russell T. Stodd MD

Life is not a spectacle or a feast; it is a predicament.
If you have been impressed with the huge profits of some latter day HMOs, you must recognize that their really big paydays are still to come, supplied by Medicare. By moving Medicare people into HMOs, ponder on this: Managed care plans will receive 95% of the average annual per-patient cost. The average costs are quite high because they include large expenses for the small number of very sick elderly patients, ie, end-stage renal disease, cancer, degenerative disease, etc. Then remember that HMOs are under no compulsion to accept specific patients, and can recruit from the healthy Medicare population! Since 22% of Medicare enrollees had no expenses in 1992, and another 33% had payments of less than $500, HMOs will enroll these people and avoid the high-risk patients. Even a Clinton economist should be able to see that Medicare will lose big, some HMOs will harvest immense profits, and the sickest population will struggle to find medical care.

He can't design a plan, he can't read the law, he has no skills. But look, he has very good hair.
How do these incompetents get such sensitive appointments? Those wonderful government-sponsored *investigators* are at it again. Having failed to learn by the embarrassing failure of the senseless prosecution of an Oahu psychiatrist, and the additional absurdity of the optician $7 nose-pad caper, now the State of Hawaii Drug Enforcement people have arrested, fingerprinted, and photographed a Hilo surgeon (and his patient) for writing a legitimate therapeutic prescription. It would be hilariously stupid but for the fact that the news media made a two-day feature story of the event, merely because the drug is not usually prescribed by an ophthalmologist. Never mind the doctor's or the patient's impeccable character, and why bother to investigate the facts, just make big headlines and quote the *investigating officer*. Can the state agency find a way to restore respect to the injured parties? Fat chance, and why would the state care about shattered reputations?

Rather than love, fame or money, give me truth.
In follow-up to the above, the Hawaii delegation to the AMA House of Delegates presented an emergency resolution to the House calling on the AMA to investigate and document this event and similar ones involving abusive actions taken by state and federal government drug enforcement and fraud agencies. *Loose cannon* is too kind a description; these mindless functionaries behave like runaway garbage trucks. The ghost of Kusserow lives on.

A bureaucracy can out wait anything.
The Medicare participation rate for all physicians and osteopaths increased 3.8% from 1994 to 1995, moving up to 74.6%, according to HHS Secretary Donna Shalala. Ophthalmologist participation changed from 78.3% to 81.2%. Every area of medical practice increased with the exception of multispecialty clinic or group which decreased from 80.5% to 79.4%. The lowest rate of participation is from psychiatrists with 58.7%, while the highest is vascular surgeons at 90.6%. Bruce Vladeck, HCFA Administrator, claims that the increase is due to "efforts both to explain the program's benefits to beneficiaries and to enforce the limit on charges made by non-par physicians." In the vernacular, it's called arm-twisting.

The seeds of godlike power are in us still.
Twenty-plus years ago the American Medical Association reorganized and hired James Sammons MD to be executive vice-president. A brilliant and dynamic man, Dr Sammons served until 1989 when he retired and was replaced by James Todd MD, an equally brilliant physician with skills different from Jim Sammons, but very effective in his own manner. Now Jim Todd has announced plans to retire in June of 1996, and the search is on for a new EVP. In the continuously roiling political, economic and legal maelstrom of American medicine, the job is extremely difficult and demanding. Managing the huge and complex business entity, responding to the abiding political challenges, sorting out the various medical corporate structures interfacing with AMA physicians, and trying to relate with other organized medical groups is only part of this most difficult job. Properly, the right woman or man requires an MD, JD, MBA, PhD in political science, and the patience and intellect of Abe Lincoln. So far, that person has not applied.

Nothing is as inevitable as a mistake whose time has come.
The Stark self-referral law continues to confuse and concern cataract surgeons who operate at ASCs. If HCFA decides that the surgeon-owned ASCs are in violation of the statute, a devastating impact would follow for both surgeons and Medicare patients. The problem is that a provision in the law includes "orthotics, prosthetics, and prosthetic devices" for which doctors may not refer patients to such facilities. IOLs are considered prosthetic devices for certain Medicare purposes. Any perceived prevention of profiteering, unnecessary procedures, or overpricing would be far outweighed by the inconvenience to patients and surgeons, and by the additional expense generated at the hospital. Once again the bean counters have taken careful aim and hit the nail squarely on the thumb.

The chaos in the universe always increases.
Hereafter, when writing a prescription for your patient, Act 206, passed at the recent legislative session, mandates that you must ask your patients whether or not they wish to have their diagnosis or symptom listed on the prescription label. It is not required to be so labeled, but we must ask if our patient wants it done. With all the wrangling over a badly flawed Workers' Comp Act, and the now vetoed no-fault auto insurance bill, one wonders how our lawmakers could find time for such shallow bureaucratic silliness.

Addenda

- Senator Robert Dole is running for President. Any astute advisor could tell him that trashing a worthy Surgeon General nominee will not help his campaign.
- *Ommatophobia* is a pathological fear of the eyes.
- When they circumcised _(name)_, they threw away the wrong part.

Aloha and keep the faith—rts. ■

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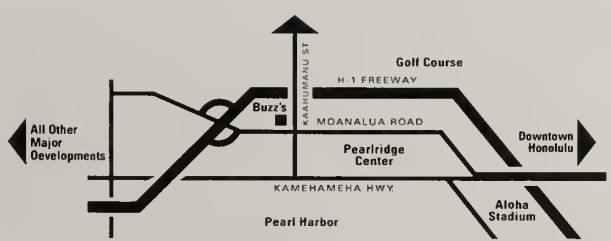
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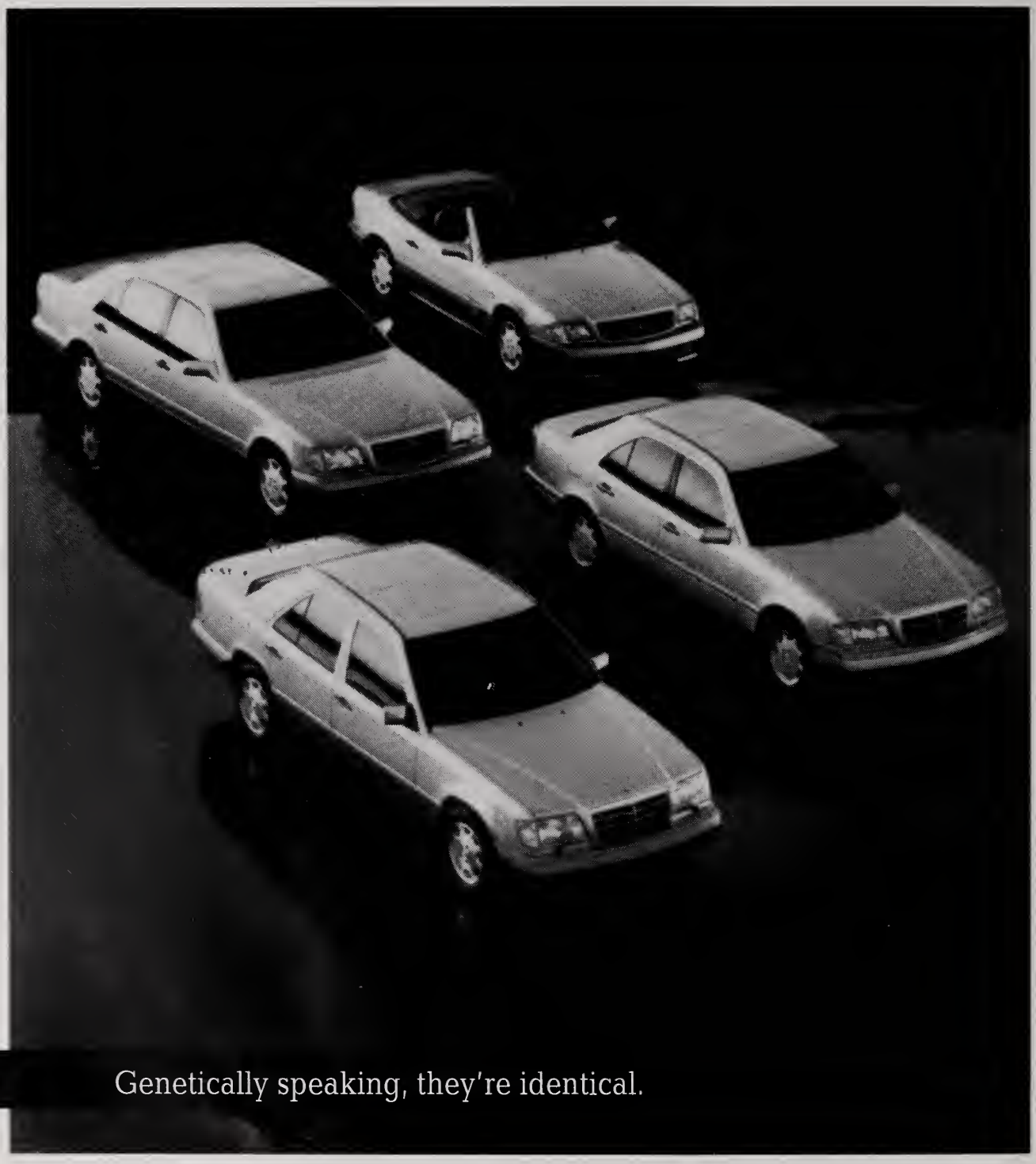
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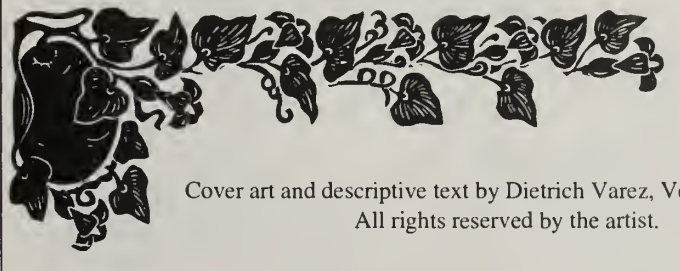
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BROWN UNIVERSITY
OCT 10 1995



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Hina the Goddess

Bathing in the bay of Hilo, the goddess Hina noticed a curious new hill she had not seen before. Hina put aside her surfboard and started up the lush green mound.

A gradual slope, but rather smooth and slippery, the hill was covered with all sorts of beautiful plants and flowers. Suddenly, just as Hina stood at the summit of the hill, it began to move. The hill moved swiftly out to sea and Hina was being carried away with it. She called out for help but no one was able to save her.

In truth the hill was actually a giant turtle. A great warrior chief had sent the turtle to abduct Hina and bring her to his home at Haupu hill at Pelekunu on Molokai.

Hina remained a captive at Haupu hill until she was eventually rescued by the supernatural powers of her two sons, Kana and Niheu.

Editorial

Norman Goldstein MD

This issue of the *Hawaii Medical Journal* contains some bribes! Call them *carrots* or *teasers*—call them what you will, but they are meant to pique your interest about the 139th Annual Meeting of the Hawaii Medical Association to be held at the Hyatt Regency Maui in Lahaina on October 5 to 8.

If you have not made your reservations, or if your invitiation has been misplaced, call the HMA office at (808) 536-7702. The HMA is holding a block of rooms for a limited time only.

The invited speakers have prepared a superb program for you. From the Mainland: Michael Mega MD, Eliseo Perez-Stable MD, and Donald Northfelt MD. From Hawaii: Bradley Wong MD and Irwin Schatz MD.

On Sunday, a special Hawaiian program will feature Terry Shintani MD; Fern Clark RN, MPH; Wayne Fukino MD; Stanford Manuia Esq; Steven Moser MD; *Kupuna* Helen Walrath; *Kakoo* Leilani Hayes; and Edward Morgan MD. Sunday's program will provide Hawaiian music, a stimulating panel discussion, and Hawaiian foods.

The golf, tennis, and other relaxing activities on Maui are *no ka oi* (the best). See you on Maui!

HMA President's Message

Frederick C. Holschuh MD

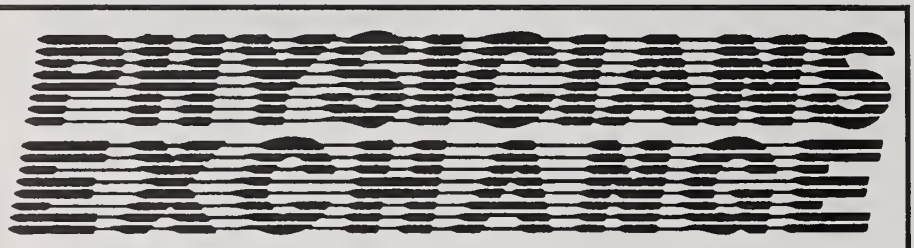
As I near the end of my term as president of the HMA, I wanted to mention two of the issues of this past year that I feel positive about. In a year of so many gloomy predictions about the future of medicine and the crises in both state and national budgets, it is nice to feel good about these two things: The Hawaii Health Systems Corporation and the Hawaii Health Council.

A physician must be involved with Hawaii's Community Hospitals to understand firsthand how important the proposed Hawaii Health Systems Corporation is to providers and patients. I have been privileged to have been a member this past year of the Governor's Task Force on the Establishment of an Agency for Community Hospitals.

This group has now become the transition team that will attempt to create meaningful legislation to present to the 1996 Legislature. The bottom-line result will be vastly improved operations of the community hospitals with local decision making through regional boards of directors. For those of us practicing on Neighbor Islands, this will make a world of difference in our medical lives. Members of this transition team are:

- Abraham Choy, Division of Community Hospitals
- Dennis Goda, MAC member, Honolulu County
- Myrna Kai, MAC member, Kauai County, Mahelona Memorial
- Gary Kajiwara, Kuakini Medical Center
- Louise Liang MD, Straub Clinic & Hospital
- Wayne Lu, MAC member, Maui Memorial Hospital
- Rich Meiers, Healthcare Association of Hawaii
- Thelma Mitsuda, Hilo Medical Center
- Roy Nagle MD, Kona Community Hospital
- Randy Perreira, Hawaii Government Employees Association
- Gary Rodrigues, United Public Workers
- Clifton Tsuji, Central Pacific Bank
- Jonathan Weisul MD, Maui Memorial Hospital
- Fred Holschuh MD, MAC member, Hilo Medical Center

It is interesting that the front cover of the preliminary report highlights the word *hoola*, which means to heal, to care. *Ola* means health, but also conveys a range of powerful concepts: life, well-being, livelihood, and salvation. I think all of us agree that this endeavor is on the right path and that our system of the Community Hospitals is in definite



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June M. Morioka, RN, Manager

need of some healing and new vitality.

The Hawaii Health Council has arisen from the Vision 2000 deliberations and the report of the Governor's Blue Ribbon Panel on Health Care a few years ago. I am very proud to be a member of this influential group as your president. The members of the Hawaii Health Council are:

- Bob Hiam, HMSA
- Senator Andy Levin, Senate Health Committee
- Peter Lewis, Hawaii Business Health Council
- Paul Lister, Hawaii Chamber of Commerce
- Nancy McGuckin-Smith, Hawaii Nurses Association
- Rich Meiers, Healthcare Association of Hawaii
- Larry Miike, Hawaii Department of Health
- John Morton, Kapiolani Community College
- Representative Len Pepper, House Health Committee
- Gary Rodrigues, Hawaii State AFL/CIO
- Dan Watanabe, Hawaii Community Services Council
- Dee Jay Mailer, Senior Vice President, Kaiser Foundation Health Plan
- Fred Holschuh MD, HMA president

This group should be a powerful and influential force in health planning in our state.

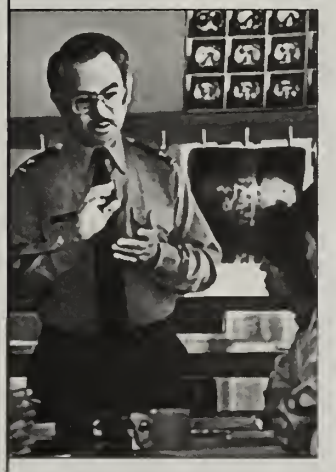
I was moved by a list of Hawaiian values that was handed out by Dee Jay Mailer, who served as chair at the first meeting of the Council. It seems especially appropriate to list them in this issue of the *Journal*:

Aloha	love
Ohana	family
Kuleana	responsibility
Laulima	cooperation
Kokua	help
Ike	recognition
Hooponopono	to set things right
Kupono	honesty
Lokahi	peace, unity, harmony

All of us need to reflect on these values and concepts as we continue to be involved in the changes affecting the health care system.

I was also uplifted in spirit by the *Thumbs Up* campaign announced recently by the administration and business leaders. All of us in health care delivery must work with business and government and have a thumbs-up feeling about where we are heading. Only through cooperation and communication will we be able to achieve our ultimate goal: *The very best care for our patients.*

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Medical School Hotline

Controversies in Medical Education

Dean Christian L. Gulbrandsen MD

What is controversial in medical education is changing as rapidly as changes in health care delivery systems. Until recently, debates centered around issues such as problem-based learning, methods of ambulatory care training, centralized decision making and resource allocation for medical students' education programs, and training faculty to be effective teachers. Then, issues regarding community involvement in program development joined the discussion in recognizing the patient and the community as the ultimate customer of medical education. Closely related to this has been the recognition that an understanding of the social sciences, as well as the biologic sciences, is needed to address the social causes and correlates of illness in caring for patients and their communities.

Most recently, attempts to cut costs of medical care through decreased third-party reimbursements, through reductions in hospital reimbursements for graduate medical education, and through managed care have made the financing of medical education the most controversial issue. Controversies regarding the means of financing medical education have eclipsed the more academic issues.

The issue now for many medical schools is survival. Large academic health centers rely on revenues from specialty care referrals to fund education in their parent medical school. They have neglected the market shift to managed care with emphasis on primary care, and their referrals and income have dropped markedly.

Late in the game, medical schools have adopted various strategies to regain their patient base. Some have formed their own PHO or HMO with primary care networks feeding their specialists and hospitals. In this arrangement, the role of department chairs is changing to that of a more collaborative team player with practicing, revenue-producing faculty having greater participation in decision making. The role of deans is changing to that of CEO of the entire clinical enterprise. Some schools have partnered with HMOs to effect the same result. Some HMOs are attempting to buy medical schools or partner with medical schools to provide a continuous supply of primary care physicians for their expanding operations. They look to train them to fit their particular value systems and cultures, and to train them to work efficiently in managed care settings.

These survival tactics raise concerns about the driving forces of medical care and education. Currently the main force nationally is economic survival and not quality care. Employers are understandably clamoring for relief from the escalating costs they must pay for their employees' medical care, while methodologies for assessing quality are still in the development stage. Only when costs are lower and quality can be measured convincingly will quality become the driving force.

Controversies abound about the impact of financial exigencies on medical education. Will medical curricula be determined by the bottom line of the clinical enterprise, by the goals of the academic enterprise, by the desires of faculty, or by the needs of patients or communities? Where is research in all of this and how will it be funded?

Medical education is best done in an excellent health care system that provides appropriate, acceptable, accessible, and effective care at the lowest possible cost. Students model their behavior after that of the practitioners in the system to become excellent physicians.

As our care systems change at an increasing rate, medical schools will need to either respond to the ever-changing models or lead the change by developing new models of their own. In either instance, increasing competition for patients will drive physicians to effectively organize into powerful, profitable groups to be able to win contracts for large numbers of patients. An evolving model is one similar to Andersen Consulting in which physicians and perhaps other health care providers are members of large, national professional corporations contracting for services in every state in the U.S. These corporations have their own universities to supply newly trained members for the corporation and to continually train all corporate members to benefit the corporation.[1] The extent to which these models deliver high-quality care will determine the quality of medical education. If high-quality medical education is to survive, educators must be actively involved in designing and operating these systems.

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1. *To the Greater Good: Recovering the American Physician Enterprise.* The Governance Committee, Advisory Board Company, 1995.



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Controversies in Medicine Abstracts of the 139th Annual Meeting and Scientific Session

The Laparoscopic Dilemma: Which is the Best Operation?

In 1987, the first human gallbladder was successfully removed using the laparoscopic technique. By 1995 hysterectomy, colectomy, appendectomy, herniorrhaphy, Nissen fundoplication, vagotomy, nephrectomy, splenectomy, adrenalectomy, and pancreatectomy had been accomplished. Operative thoracoscopy had invaded the chest surgeons' world. There seems no limit to the surgeons' daring.

This technical innovation has decreased the length of hospital stays, decreased patients' pain, and hastened their return to work. Yet, it has raised the cost of care and spawned a multimillion dollar industry to satiate its ravenous hunger for instrumentation. It has stirred great debate over its safety and outcome. It is a chimera: to different eyes an economic boon or bane, a surgical tour de force or sleight of hand.

No doubt, this is not evolution. We are in the middle of a surgical revolution and as such are finding it difficult judging what ultimately will be found to be safe, good, and wise. Among us are the conservatives—hesitant to commit too early—and the avante-garde—eager to embrace anything new and challenging. Great benefits have already been reaped. We will do the right thing if we proceed with caution, care, and above all, with the patients' benefit at heart.

Bradley D. Wong MD, FACS
Assistant Professor of Surgery
University of Hawaii John A. Burns School of Medicine

Invasive Versus Noninvasive Treatment of Coronary Artery

Reperfusion of the myocardium in patients with coronary artery disease is an accepted method of therapy, but the physician faces the problem of deciding when to recommend such treatment. Since the goals are to improve survival and reduce symptoms, management must be evaluated on the basis of convincing data. Technologic advances have permitted low rates of complications and mortality for both coronary angioplasty (PTCA) and coronary artery bypass grafting (CABG), but technical prowess by itself is insufficient to justify invasive procedures. Data clearly show that patients with significant three-vessel coronary artery disease, with or without reduced left ventricular systolic function, have improved survival when reperfusion with CABG is performed. High grade proximal left anterior descending coronary artery disease accompanied by significant coronary obstruction in one other vessel also is probably an indication for reperfusion. Whether PTCA has an effect equivalent to that of CABG on improving survival in these groups of patients is still uncertain. Fewer data are available about invasive procedures in the elderly; decisions about therapy in this group are difficult because of the lack of acceptable information.

Intensive medical therapy requiring marked changes in lifestyle and elimination of risk factors clearly reverses coronary obstructive disease and may represent an alternative to invasive treatment in some patients.

Irwin J. Schatz MD
Professor of Medicine
University of Hawaii Department of Medicine

Treatment Options in the Acute Stroke Patient

Stroke is the third-leading cause of death in the United States, trailing only heart disease and cancer. Advances in basic and clinical neuroscience may improve the outcome of acute stroke but require patients to receive treatment within a short *window of opportunity*. Unfortunately many patients and physicians do not yet perceive the treatment of stroke as an acute emergency. This presentation reviews the efficacy and practicality of acute stroke treatments. Future treatment options will also be discussed. Calcium flux, glutamate excitotoxicity, platelet and leukocyte activation, free radical formation, and nitric oxide metabolism may be important targets of therapy regardless of the stroke etiology. New therapies under active investigation include thrombolytic agents, NMDA antagonists, and free radical scavengers.

Michael S. Mega MD
UCLA School of Medicine
Dept of Neurology, Lab of Neuro Imaging

Alzheimer's Disease: Etiology? Prevention? Treatment Efficacy?

Current research points to Alzheimer's disease (AD) as a syndrome composed of different disorders. What are the specific clinical findings that distinguish the AD syndrome from other dementing disorders? How can we differentiate diffuse Lewy body disease (DLBD) from the other members of the AD syndrome? Might different subgroups respond differently to treatment options? Many questions surround one of the most important health care issues facing our society in the next century. This presentation provides an overview of this rapidly changing field by surveying the proposed pathophysiologic causes, clinical challenges, and treatment options now being investigated.

Michael S. Mega MD
UCLA School of Medicine
Dept of Neurology, Lab of Neuro Imaging

Caring for Patients with Fatal Illnesses with Compassion in a Cost-Conscious Environment, Withholding and Withdrawing Life Support, and Physician-Assisted Suicide

A standard approach to the care of terminally ill patients will be presented that relies on compassion, which is defined as *a sustained and practical approach to alleviating the suffering of the dying*. The principal elements of this approach include:

- Engaging the patient and loved ones in the plan of care.
- Simple and effective management of pain.
- Simple and effective management of dyspnea.
- Hospice care (at home whenever possible).
- Attention to the needs of survivors.
- Rational limits on nutritional support and other inappropriate *treatments*.
- Supporting a decision by the patient to forego futile medical interventions at the end of life.

This strategy, with various modifications, has been proven to be satisfying to patients and their loved ones through the introduction and growth of the hospice movement in Europe and North America. This strategy has been proven to be cost-effective under the constraints of capitation through application of Medicare and Medicaid hospice benefits programs.

Strategies for withholding and withdrawing *life support* are derived from the same principals of compassion that apply in other circumstances of terminal illness. The concept of physician-assisted suicide has received great notoriety of late, but is best viewed as an approach that should never be considered except in the most extreme and intractable cases of suffering.

Donald W. Northfelt MD
University of California
Division of Hematology & Oncology
San Francisco, California

The HIV Positive Patient—Does Treatment with Antiviral Agents Alter the Course?

Treatment with antiretroviral agents (nucleoside analogs, which are inhibitors of the viral reverse transcriptase enzyme) constitutes the current standard of care for HIV infection throughout most of North America, Australia, and Europe. Critical review of 15 reports published in the medical literature describing clinical studies of these agents reveal that:

1. Symptoms and opportunistic infections related to HIV infection can be delayed by antiretroviral therapy in patients with more robust immune systems.
2. Life can be extended for brief, but perhaps clinically meaningful, duration with the use of antiretroviral therapy in patients with more advanced HIV disease, but the survival benefit of initiating therapy earlier in the course of HIV disease has not been firmly established.
3. Combinations of antiretroviral agents may be more effective than single agents at delaying symptoms and opportunistic infections related to HIV infection.
4. Various antiretroviral treatment strategies can temporarily increase the number of circulating $CD4^+$ T-lymphocytes and decrease the amount of HIV RNA found in patients' blood, but the clinical relevance of these findings has not been firmly established.
5. Limited data suggest that the lengthened time without symptoms and opportunistic infections provided by antiretroviral therapy may be compromised significantly in quality by toxicities of the therapy.

Several factors are emerging that may alter the status of antiretroviral therapy in the near future:

- New drugs (non-nucleoside reverse transcriptase inhibitors, HIV protease enzyme inhibitors) are in advanced stages of development. In combination with nucleoside analog reverse transcriptase inhibitors they could be able to provide more meaningful clinical benefits.
- A better understanding of viral activity brought about by the use of sensitive measures of plasma viral load may permit more precise evaluation of the effect of antiretroviral therapy and allow rational decisions about changes in treatment to be made, leading to greater therapeutic benefit.

Donald W. Northfelt MD
University of California
Division of Hematology & Oncology
San Francisco, California

Hawaii HealthQUEST: A Managed Care Demonstration Project

James C. Budde MD, FACEP, Walter K. Patrick MD, PhD, Madeleine T. Budde BS, RDH

Hawaii has been dubbed a leader in health care. In August 1994, Hawaii began a five-year demonstration project with federal backing—QUEST. The trial managed-care project was designed to provide quality care to public clients in a cost-effective manner. This study surveyed doctors in Hawaii to assess QUEST at the six-month mark. The survey showed that QUEST's early performance is short of meeting its goals. Further evaluation and accounting will be needed to determine if QUEST can represent the future of managed care.

It is readily apparent that the nation's health care system is in crisis. The nation spends one-seventh (14%) of its gross national product on health care, with a total cost approaching $1 trillion. Yet many consider the Medicaid system a national embarrassment and more than 30 million Americans are uninsured. Most of America's health care indices trail those of nations such as Japan, Canada, England, and Germany.[1]

Hawaii has been touted as *The Health State* by its latest administration and was cited by the Clintons as being a vanguard of health care.[2] Since the 1960s Hawaii has been attempting to reach universal access to medical care.[3] In January 1966 Hawaii became one of the first six states to implement a Medicaid program operated by the Department of Human Services. In 1974 Hawaii created its Prepaid Health Care Act (PPHCA) and became the only state to require employers to provide a package of health care benefits to employees. The employer is mandated to pay at least 50% of the cost and provide membership in either a fee-for-service plan or a health maintenance plan. Co-payments reduce overutilization and the system is administered without a large state bureaucracy. This has resulted in Hawaii's overall medical costs being lower than the rest of the nation.[4]

In 1993 Hawaii enacted the State Health Insurance Program (SHIP) to provide insurance to the *gap group*, those part-time workers or self-employed workers who could not afford insurance. The benefit package was slightly less comprehensive than that for Medicaid or general assistance clients and included more co-payments. SHIP enrolled about 2% of the state's population.

Hawaii officials considered that 98% of its citizens are covered under some health insurance program, leaving 20,000 to 30,000 uninsured, many being homeless people, runaways, recent immigrants, or moderate-income self-employed who choose not to buy insurance. Yet Hawaii is facing the same crises as the remainder of the nation. Costs are rising and significant health problems are not being addressed.[5-6]

In April 1993 the State of Hawaii Department of Human Services applied for federal assistance from the Health Care Financing Administration (HCFA) to create Hawaii HealthQUEST.[7] Hawaii proposed to develop a statewide demonstration project that would create a public purchasing pool to arrange for health care through fully capitated managed care plans. The QUEST acronym came from its project objectives: to focus on providing *quality* care, ensure *universal* access, encourage *efficient* utilization, *stabilize* costs, and *transform* the way health care is provided to public clients. The project was formulated during the Clinton administration when health care was being scrutinized and publicized, and the President endorsed the concept of managed competition for health care delivery.[8] QUEST hopes to show that it is possible to control health care costs and expand health care access by redefining government's role and more effectively using the private sector economic factor of competition.

Hawaii proposed to create a single pool of clients from Medicaid, General Assistance, and SHIP groups. The proposal anticipated a pool of 88,100 public clients. The federally assisted five-year demonstration would provide a standard benefits package designed to promote cost containment, encourage proper utilization of resources, and stress preventive care, while improving access. The benefits package would be fully capitated. The State would contract with different plans to provide care at a fixed monthly rate. An existing framework of plans (five) would create competition. The State anticipated that the private sector would be enthusiastic about participating in providing care. Each client would be able to select a single primary care provider, with the goal of creating a *seamless* health care program with equivalent quality of care for public and private patients.

Hawaii's proposal to HCFA suggested that its program could highlight certain proposed national health care policy implications. Hawaii suggested that this five-year funded project would answer questions about competition and the private sector, about means of ensuring quality care with universal access, and about the efficacy of a public purchasing pool. The QUEST program would also provide monitoring and evaluation research functions.

The Clinton administration accepted Hawaii's proposal and the program began in August 1994. The total federal contribution (50% of total program cost) was anticipated at about $600 million for the five years. The enrollment of clients began and the pool of 88,100 public clients quickly grew to greater than 130,000 by March 1995.[9]

The research attempted to determine some early indications as to whether QUEST was meeting its stated objectives. A survey was done on the experience with QUEST after six months of its inception. The State was not forthcoming with rosters of QUEST clients nor was it able to make available data on utilization, costs, or other indicators. The State also suggested the authors defer to

its own research, which is to be subcontracted to the Urban Institute and to be done at some unspecified time in the future.[10]

This survey focused on the experiences of the physicians asked to provide care to QUEST clients. According to Hawaii Medical Association President Frederick C. Holschuh, in 1995 Hawaii has approximately 3,500 licensed physicians of whom 1,787 belong to the HMA. Of these 1,787, many are inactive, some are government employees, or physicians-in-training, leaving a pool of just over 1,000 physicians. The survey resulted in the return of 382 usable completed questionnaires.

Survey Questions and Responses

1. *Do you participate in seeing QUEST patients?*—In a percentage similar to that for all physicians in the state, 285, or 74.6%, answered yes. A few qualified their answers: several accept QUEST patients only through being on-call to an emergency department. The participants can be contractually aligned with any of five plans; many are capitated through more than one plan (Aloha Care: 112; Hawaii Medical Services Association: 233; Kaiser: 17; Queen's: 141; Straub: 32).

2. *As defined by QUEST, are you a primary care provider or a specialist?*—Primary care providers numbered 148, specialists 205, and a few were listed in both categories. The QUEST system is designed to allow specialty care only through the referral by a primary care provider.

3. *Would you recommend that your colleagues participate in QUEST?*—This resulted in 125 yeses and 179 nos, a discouraging 41.1% affirmatives. One respondent answered yes with the reasoning that *the burden should be shared.*

4. *What percentage of your practice consists of QUEST patients?*—There was a bimodal curve with peaks for the 0 to 5% and 6% to 15% categories. The mean is 16.1% of the practice.

Percentage of QUEST Patients	Responses
0 to 5%	93
6% to 15%	93
16% to 25%	39
26% to 35%	23
36% to 45%	12
46% to 55%	12
56% to 65%	3
66% to 75%	4
76% to 85%	3
more than 86%	2

5. *Has QUEST increased patient access to health care?*—Only 31.3% of respondents said patient access had increased. A few positive anecdotes mentioned patients who were seen after years of neglected medical problems.

6. *Has QUEST improved preventive health care?*—A mere 21.5% said that preventive health care had improved. This is a long way from meeting one of QUEST's primary goals.

7. *Was assignment of QUEST patients fair?*—Only 38.6% responded yes. Many physicians had contracted to keep only their former DHS patients under the new QUEST designation, but were disappointed when they received the assignment lists to find unwanted new patients and missing former patients. Patients also experienced problems in being assigned to geographically remote physicians (even different islands) or having long patient-physician relationships broken. Additional problems arose for the federal-state sponsors of the project when loopholes were found that allowed enrollment to swell. College students dropped their health insurance, for which they had been paying, and enrolled in QUEST.[11] Some self-employed persons with expensive homes and cars were able to join QUEST because there were no asset considerations for eligibility and these persons could control their cashflow.

8. *Is extra staff time required because of the QUEST program?*—Positive answers numbered 86.6%. The number of extra hours per week was estimated, with a mean of 4.9 hours.

Extra Office Hours	Responses
0 to 5	106
6 to 10	34
11 to 15	7
16 to 20	5
More than 20	10

Reasons for extra staff time were also enumerated.

Extra Staff Time	Responses
Assess eligibility	182
Filling out forms	159
Getting preauthorization from the plans to refer or perform studies	218
Making referrals	140
Billing	96

Many physicians listed several reasons. This question also elicited many comments, some quite angry, about the time wasted on the telephone trying to deal with the plans.

9 to 10. *Have the physicians experienced any problems receiving or making QUEST patient referrals?*—Problems were incurred by 31.5% in receiving patient referrals, and 49.6% in making patient referrals. The latter problems are primarily because many specialists have elected not to take QUEST patients, limiting the pool of accepting specialists.

11. *Are you happy with the turnaround time for reimbursement for QUEST patients?*—Only 33.0% were satisfied. Many mentioned the uneven performance by the five different plans. Others cited the time wasted in pursuing payment from the plans.

12. *Is the reimbursement fair?*—Only 23.5% agreed that reimbursement was fair. Several noted that reimbursement was no worse than former Medicaid payments, but that, too, had been unfair. One physician pointed out that at least there was room for improvement because of capitation, if costs could be controlled.

13. *Is the QUEST program a hassle or nuisance for your practice?*—An overwhelming 81.7% said this was true. Many commented on the reasons previously discussed in question 8. Others generalized about QUEST patients being noncompliant, and often being patients who lead chaotic, stressful lives.

Hawaii's state administration is considering expanding QUEST. One plan is popularly known as QUEST II, or Son-of-QUEST, and would include the aged, blind, and disabled, most of whom currently are covered by Medicare.

14. *Do you think it is a good idea to expand the QUEST program (Phase 2) to include the aged, blind, and disabled?*—Of the respondents, 15.2% noted it was a good idea. Several strongly said that it would be a big mistake, especially without review of Phase I.

Consideration is also being given to QUEST III, or Grandson-of-QUEST. This would allow public employees, retirees, and the private sector to enroll in QUEST.

15. *Should QUEST be expanded, as the Governor has sug-*

gested, to include public employees, retirees, and the private sector?—Only 6.3% of responding physicians agreed. A couple did say yes, with the stipulation that the Governor be the first to enroll. Many added strong negative comments to this question.

16. The final question asked: *Have your patients experienced any bad outcomes as a result of being enrolled in QUEST?*—Of the respondents, 30.7% did have patients who experienced bad outcomes. Most of these cited delays in treatment. Some patients ran out of medicines for their chronic conditions because of disruption of long-term relationships with their physicians. Others described the futility of trying to refer patients for mental health care. One physician described a patient who became pregnant after having difficulty getting into the QUEST system and running out of birth control pills.

This study admittedly is a convenience survey of only one portion of the health care system being tested in Hawaii. It also looks at QUEST after only six months, when many bugs are still to be eliminated. The results are eye-opening to the difficulties in attempting to create the nation's first *seamless* health insurance system. Physicians recognize the burdens imposed on their practices and are unlikely to say QUEST is improving efficiency of acute care or increasing preventive care.

QUEST is a major attempt at governmental health care. It is a managed care system attempting to impose cost controls from the payer's perspective. Obviously it is financially impossible for any society to provide unlimited health care for its entire populace. The income stream is finite and there needs to be a switch from increased utilization of medical resources to decreasing the demand for services. Hawaii's physicians would be delighted if QUEST were a successful experiment, rather than just a new state entitlement that grows with time. Those interested in the QUEST experiment need to be given further information. Are the objectives of QUEST being met? There needs to be further outcome studies with full disclosure of financial implications of the experiment. Physicians need input to any development of or changes in QUEST. If QUEST is to be a model for the nation's health care system, it must be thoroughly analyzed and critiqued.

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High Mortality Rates in Native Hawaiians

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Native Hawaiians continue to have higher mortality rates than do other ethnic groups in Hawaii. This discrepancy becomes even more pronounced when rates are calculated separately for full-Hawaiians versus part-Hawaiians versus all races. In an exploratory discussion of these data, a group of Native Hawaiian physicians recommend greater attention be given to Native Hawaiian values and participation in health care delivery, increasing access to services, and further research.

Introduction

Compared to other ethnic groups, Native Hawaiians continue to have higher rates of mortality for almost every major cause of death.[1-3] Few public reports about health, however, disaggregate full-Hawaiians and part-Hawaiians. Rather, an assumption is made that full- and part-Hawaiians share the same poor health status.[4-5]

An exception was a landmark paper by Look[6] that presented age-adjusted death rates per 100,000 for three groups—full-Hawaiians, part-Hawaiians, and all races—for the years 1910, 1920, 1930, 1940, 1950, 1960, 1970, and 1980. This study found at each decade the major causes of death were similar for all three groups but the rates of death were substantially higher for full-Hawaiians. Specifically, death rates from infectious diseases were high for all three groups in the early part of the century, but were at least twice as high for full-Hawaiians compared to those of part-Hawaiians and all races (the total population). After 1940, death from infectious causes declined and death from chronic diseases increased for all groups, but again the rates were considerably higher for the full-Hawaiian group for all causes of death studied. In the decade years 1950 to 1980, differences in the mortality rates between part-Hawaiians and all races for all causes of death were not statistically significant. In addition, the 1980 data suggested a lessening in the disparity between full-Hawaiians and the other two groups.[6]

Since Look's 1982 report, public attention to the health status of Native Hawaiians has increased. For example, the 1985 publication of the *E Ola Mau Native Hawaiian Health Needs Study Report*[7] was followed by the enactment of the Native Hawaiian Health Professions Scholarship Program,[8] the Native Hawaiian Health Care Act of 1988,[9] and the Native Hawaiian Health Care Improvement Act of 1992.[10] These federal mandates established Native Hawaiian Health Systems on the major islands (Oahu, Hawaii, Kauai, Maui, and Molokai) through which health education, health promotion, disease prevention, and some traditional healing services are provided. The purpose of the scholarship program is to increase the number of Native Hawaiians in the health professions, with recipients agreeing to *pay back* their scholarships by working in designated shortage areas.

The current study was undertaken to: 1) update and expand the 1982 Look report by adding in the data from 1990 and 2) investigate if changes in mortality have occurred with this increased attention and programming in the area of Hawaiian health. Results of the updated mortality analysis for selected causes were shared with six Native Hawaiian physicians for the purpose of recording their discussion, reactions, and recommendations. As these physicians had been involved in the Hawaiian health care initiatives, they hoped to see a continued decrease in the discrepancy in mortality rates among the groups. Highlights of these statistical findings and a summary of the physicians' responses are presented.

Methods

Mortality rates were calculated as follows. Numerator data were derived from Hawaii Department of Health computer files of death records. Requested were the number of deaths by major causes and for all causes for full-Hawaiians, part-Hawaiians, and all races for 5 years around each decade year (eg, for 1990, numbers of deaths were obtained for 1988 to 1992), then divided by 5 to calculate the mean number of deaths for 1990. This procedure was done to minimize the effect of yearly variation in small numbers of deaths within categories. As in all states, the underlying cause of death is determined by the physician, while ethnicity is among the personal facts about the decedent that are obtained and recorded by the funeral director.[11-12]

Denominator data are based on the U.S. Census but have been adjusted by the Hawaii Department of Health to reflect the ethnic distribution determined through the state's health surveillance program, which collects more detailed data on ethnicity than does the U.S. Census. In the surveillance program, a

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respondent's ethnicity is determined through an algorithm based on the ethnicity of both parents; a person is classified as full-Hawaiian if both parents were Hawaiian and part-Hawaiian if either parent had any Hawaiian blood. Using this method, in 1990 about 9,019 (0.8%) Hawaii residents were full-Hawaiian and about 201,071 (18%) were part-Hawaiian.[13] This compares to 138,742 Native Hawaiians (about 30% fewer) identified by the U.S. Census in that year.[14]

As in the Look study, mean mortality rates were age-standardized to the 1950 population, using the indirect method, to control the effects of changing age structure over time, thus allowing comparison of rates across groups and over time. Rates were expressed per 100,000. For each mortality rate, the 95% confidence intervals were calculated based on a method developed by Mantel that is appropriate for Poisson-type distributions such as death.[15-16] The confidence intervals provide an estimate of uncertainty in the rates; in general, the smaller the number of deaths in a given category, the larger the uncertainty about the exact death rate and, hence, the larger the confidence interval. Differences among groups or across time are considered statistically significant when confidence intervals for the mortality rates do not overlap.

Findings

Mortality rates for full-Hawaiians, part-Hawaiians, and all races from 1910 to 1990 are provided in Figure 1 (all causes of death), Figure 2 (heart disease), and Figure 3 (malignant neoplasms). To simplify the figures, the 95% confidence limits are not shown; for 1960 to 1990, however, rates and 95% confidence intervals are provided in Table 1. A complete set of findings is provided in a related technical report.[17]

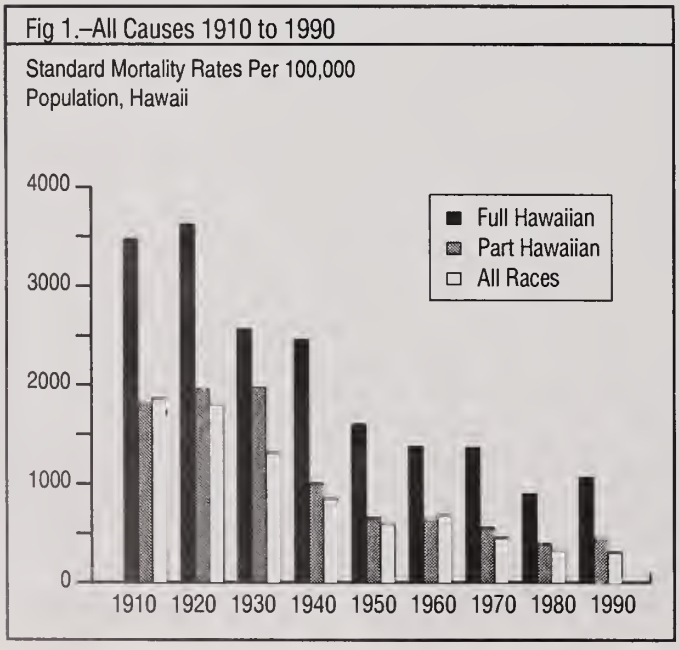
In general, the findings suggest that, in almost every decade, mortality rates for full-Hawaiians were significantly higher than for the other groups. Although the mortality rates for part-Hawaiians and all races seem to have converged in 1960, they have diverged since then with part-Hawaiians exhibiting significantly higher mortality rates than all races.

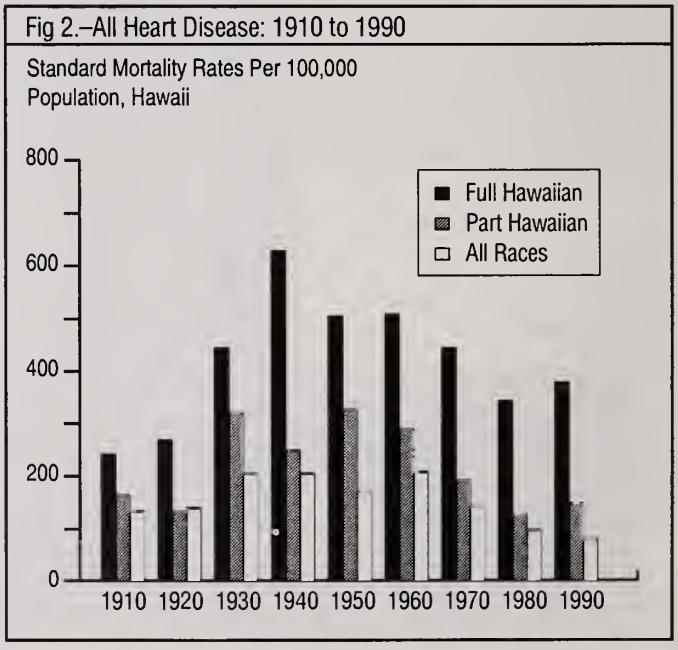
Specifically, Figure 1 shows that all-cause mortality rates declined for all groups over the century. Even between 1960 and 1990, the declines in rates were significant for all groups. At all decades, however, the death rates for full-Hawaiians were significantly higher than for the other two groups. In contrast to the downward trend of mortality rates for all groups between 1960 and 1980, the 1990 rates for full- and part-Hawaiians are higher while the mortality rate for all races is continuing to decrease (although differences between 1980 and 1990 rates were not statistically significant for any group). In addition, the 1990 all-causes mortality rate for full-Hawaiians was 2.4 times that of part-Hawaiians and 3.5 times that for all races. The 1990 all-causes mortality rate for part-Hawaiians was 1.5 times that of all races.

Figure 2 shows that mortality rates for heart disease tended to increase until the middle of the century and then decline for all groups. Between 1960 and 1990, the over-time declines in rates were significant for all groups. In 1990, however, the mortality rate for heart disease for full-Hawaiians was still 2.5 times that for part-Hawaiian and 4.7 times that for all races, while the rate for part-Hawaiians was 1.9 times that of all races.

Figure 3 shows that mortality rates from malignant neoplasms have risen for all groups since 1910, but especially for part- and full-Hawaiians. Since 1960, a significant decline in cancer mortality rates was seen only for the all races group. For the full- and part-Hawaiian groups, 1990 cancer mortality rates are not significantly different from 1960 rates. In addition, the 1990 cancer mortality rate for full-Hawaiians was 2.1 times that of part-Hawaiians and 3.2 times that of all races, while the rate for part-Hawaiians was 1.5 times that of all races.

Table 1 shows the actual rates and confidence intervals for the major causes of death for the decade years 1960 to 1990. It also provides more detail on cancer deaths. Specifically, 1990 mortality rates for breast cancer were 2.6 times higher for full-Hawaiians than for the other two groups (which exhibited similar rates). No group, however, experienced significant declines in breast cancer mortality between 1960 and 1990. For





lung cancer, mortality rates for full-Hawaiians were 2.3 times higher than for part-Hawaiians and 4.3 times higher than for all races. Lung cancer mortality rates have increased since 1960 for all groups, but only significantly so for the all-races group. For colon/rectal cancer, 1990 mortality rates were significantly higher for full-Hawaiians than for all races; the rate declined significantly since 1960 only for the all-races group.

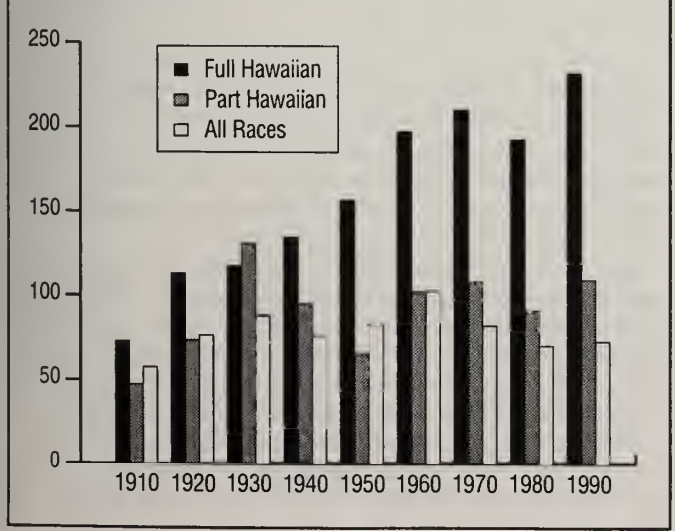
Physician Response

Increased local and national awareness of Native Hawaiian health parallels heightened involvement of Native Hawaiian health professionals and paraprofessionals in research as well as in the development of health care systems that provide adequate, appropriate, and acceptable health care for Native Hawaiians. This involvement is critical and presumes that cultural knowledge will be used in the development and implementation of services.[18] Aligned with the belief that Native Hawaiians' capacity for self-determination is predicated on the extent and quality of their participation, the findings of this study were shared with six Native Hawaiian physicians to elicit their reaction.

Method

Six Native Hawaiian physicians participated in the discussion that responded to the updated mortality data and generated recommendations for future direction. They represented a variety of professional settings (urban, rural, and institutional), organizational affiliations, and areas of expertise. In terms of medical specialty, there were two internists, a general practitioner, an oncologist, a hematologist, and a non-practicing physician with a specialty in medical informatics. Three of the six physicians are faculty at the University of Hawaii John A. Burns School of Medicine. All six physicians have research expertise in the area of Native Hawaiian health and are affiliated, either through board membership or as a contributing consultant and/or practitioner, to one or more of the five Native Hawaiian health care systems. Five of the physicians have served large Hawaiian populations through private practice. The physician discussion group was held in Kaunakakai, Molokai on October 28, 1994.

Fig 3.–All Malignant Neoplasms: 1910 to 1990



Response to Findings

Upon presentation of the mortality data update, the six physician participants expressed concern and disappointment about the disparate rates in the mortality of Native Hawaiians when compared to all races in the Hawaiian Islands. The dramatic and persistent disparity in the rates of full-Hawaiians over the other two groups, coupled with an apparently increasing disparity

Table 1.—Mortality Rates and 95% Confidence Intervals (CI) for 1960 to 1990

		Full-Hawaiian	Part-Hawaiian	All Races
All Causes				
1960	Rate	1,370.0	643.1	679.5
	CI	1,287.1-1,458.4	603.9-684.2	638.1-723.0
1970	Rate	1,360.3	555.5	454.4
	CI	1,199.8-1,542.6	512.1-602.1	426.7-483.5
1980	Rate	892.1	391.9	331.9
	CI	774.3-1,026.8	363.7-422.5	311.7-353.2
1990	Rate	1,062.7	449.6	307.4
	CI	947.9-1,191.3	420.8-478.4	288.7-327.1
Heart Disease				
1960	Rate	508.5	237.7	206.8
	CI	459.8-549.2	217.5-259.8	194.2-220.1
1970	Rate	443.2	190.0	142.9
	CI	358.6-549.6	162.2-222.4	134.2-152.1
1980	Rate	340.8	125.8	96.5
	CI	275.7-422.6	110.9-142.6	90.6-102.7
1990	Rate	375.9	146.8	79.2
	CI	313.1-451.1	130.9-164.4	74.4-84.3
Malignant Neoplasms				
1960	Rate	197.3	102.1	102.7
	CI	171.3-227.1	90.0-115.8	96.5-109.3
1970	Rate	210.2	108.2	82.5
	CI	150.1-285.9	87.6-134.2	76.9-88.4
1980	Rate	192.3	90.8	70.5
	CI	140.2-257.7	76.7-107.5	66.2-75.0
1990	Rate	231.6	109.6	72.9
	CI	181.8-294.1	96.7-124.3	68.4-77.5
Malignant Neoplasms of the Breast				
1960	Rate	16.2	11.4	5.7
	CI	8.8-27.2	7.6-16.6	4.8-6.8
1970	Rate	11.3	6.5	4.9
	CI	2.3-33.0	2.4-14.1	3.6-6.6
1980	Rate	15.0	10.4	5.7
	CI	3.1-43.7	5.8-17.2	4.6-7.1
1990	Rate	19.9	7.5	5.8
	CI	6.5-46.4	4.1-12.6	4.8-7.0
Malignant Neoplasms of the Lung/Bronchial				
1960	Rate	24.6	16.4	11.5
	CI	8.0-57.4	7.5-31.2	8.9-15.0
1970	Rate	56.1	23.6	15.5
	CI	28.0-100.4	14.2-36.8	13.2-18.2
1980	Rate	57.8	25.5	15.6
	CI	31.6-97.1	18.2-34.6	13.9-17.5
1990	Rate	77.2	33.0	17.9
	CI	48.9-115.8	25.9-41.9	16.3-19.7
Malignant Neoplasms of the Colon/Rectum				
1960	Rate	15.5	8.3	12.5
	CI	3.2-45.3	2.3-21.2	9.8-15.9
1970	Rate	4.0	6.5	9.7
	CI	0.1-22.3	2.1-15.1	7.9-11.8
1980	Rate	9.0	6.7	7.5
	CI	1.1-32.5	3.2-12.3	6.3-8.9
1990	Rate	16.5	9.8	7.8
	CI	18.8-42.2	5.8-15.5	6.8-8.8

between part-Hawaiians and all races, was disturbing to the group and spurred discussion around three critical areas that have an impact on the disparity: Native Hawaiian attitudes about health, accessibility of services, and the need for further research.

Attitudes

The discussion highlighted several attitudes and behaviors that the physicians said were commonly found among many of their Native Hawaiian patients, including: 1) a fatalistic attitude about conditions such as diabetes, cancer, heart disease, and obesity, often coupled with an expressed powerlessness to control or change the course of a disease; 2) the belief that Hawaiians will not be treated with respect in existing mainstream services; 3) a distrust of Western approaches to health care and treatment; 4) a preference among many Native Hawaiians to include, and in some cases rely solely on, traditional Hawaiian healing practices; and 5) dislike of treatment that focuses on the individual, versus the individual in relationship to his or her family and social support system.

Understanding these behaviors and attitudes requires an appreciation of the traditional Hawaiian values that underpin Hawaiians' concepts of illness and health (Table 2). These include *mana* (interrelatedness of all things), *lokahi* (harmony and unity), *ohana* (extended family and social supports), and *kokua* (mutual help and cooperation). These values affect health-seeking behaviors and must be taken into account in order to develop and provide services that are sensitive and appropriate.[18] However, they are often in conflict with Western values (specialization, competition, materialism, economic gain, and emphasis on the individual) and affect the attitudes and health-seeking behaviors of Native Hawaiians who must negotiate a Western system of health care.

Table 2.—Native Hawaiian Values

Value	Meaning
Mana	Native Hawaiians believe that all things, animate and inanimate, are interrelated by a creative force that is the divine power of the gods. A Hawaiian's oneness with spirits and gods might be viewed as a part of the natural consciousness for the Hawaiian, a kind of second sense which encompasses every phase of sensory and mental consciousness.
Lokahi	Native Hawaiians believe in harmony and unity. Lokahi has been described as ways to live in unity or at peace with oneself, the family, the gods, and the land. Thus, it is important to live in harmony with others, to be respectful of the natural environment, and to acknowledge that spirits and gods are an integral part of nature.
Ohana	Ohana refers to the family at-large, which may include the family, the extended family and others who are regarded with affection. Within the ohana there are feelings of unity, shared love, shared responsibility, and shared material goods. A predominate social characteristic of a Native Hawaiian is a tendency to see oneself in relationship to others, as a contributing group member.
Kokua	Kokua refers to mutual help and cooperation, which contributes to group unity by fostering cooperation, interdependence, and reciprocity. The focus is on the group rather than the self. Processes seen as benefitting others are more acceptable than those that lead to personal gain.

Physicians cited the fatalistic attitude often found among their patients, notably those with cancer. For example, when a physician asks groups of women in Waianae if they know someone who has died of breast cancer, almost everyone in the group raises her hand. "It becomes an accepted part of their existence." The fatalistic attitude frequently leads to delayed diagnosis and nonacceptance of recommended treatment and, because of this, outcomes for cancer are often negative, which further casts doubt on Western medical approaches. Those who do accept treatment are often at an advanced stage of illness and are more likely to die of the cancer, rather than survive. One participant noted:

> These (Native Hawaiian) women are a lot braver than other patients. They are not afraid. They have seen other people go through treatment and die (of cancer). They have seen the side effects of chemotherapy, and they are often ready to *check out* (accept death) when diagnosed with cancer.

In treatment for other conditions, such as obesity, diabetes, and heart disease, physicians also noted a tendency among Native Hawaiian patients not to comply fully with treatment or to refuse treatment altogether. For example, common responses of patients to treatment recommendations include "screw it," "no matta, goin' die," and "nobody goin' cry for me." Those who have seen their loved ones suffer through chemotherapy often respond, "I'd rather die of a heart attack than something like cancer."

During this discussion, each physician noted the importance of traditional healing practitioners and practices for many of his or her Native Hawaiian patients. Some of the participants noted that Native Hawaiian women patients were especially likely to seek and use alternative, non-Western, modes of treatment such as *laau lapaau* (use of herbs) *or laau kahea* (use of prayer), resulting in a later diagnosis and/or resistance to Western treatment recommendations. "Often, they set themselves up by thinking they must choose one (type of treatment) or the other, rarely using traditional and Western treatments simultaneously."

Many practitioners recommend life-style changes for Native Hawaiians (eg, in the areas of diet, exercise, and substance abuse). Those programs that focus on the individual, separately from his or her *ohana* and environment, however, are not compatible with the community-based orientation of the culture and have poor outcomes. A notable and successful exception is the traditional Hawaiian diet program in which participants eat meals together, discuss health and cultural issues, and provide mutual support over an extended period of time.[19-20]

The physicians also shared that many of their Native Hawaiian women patients delayed seeking medical care or committing to recommended follow-up because it would interfere with their immediate obligations to care for their families. In addition, Native Hawaiians are reluctant to burden their family members with the inconvenience of treatment, medical appointments, or witnessing their pain and suffering. Another participant noted, however, that the value to place family and others first, before the needs of the individual, can be incorporated into culturally

competent health programs for women. For example, a 1989 breast cancer screening project encouraged 200 women to participate by focusing on the benefit of their participation for other Native Hawaiian women and on the need to prevent illness because of the impact it would have on the family. Nearly 100% of these women followed-through by getting a screening mammogram.[21] Similarly, the Waianae Cancer Research Project utilizes a woman's extended family, social network, and environment as vehicles to educate and promote breast and cervical cancer screening (Banner RO, et al, unpublished data, 1994).

While the data presented significantly higher death rates for full-Hawaiians compared to part-Hawaiians, participants did not think full-Hawaiians were more likely than part-Hawaiians to subscribe to these cultural values or to follow traditional Hawaiian healing methods. The extent of assimilation of the client appeared to be a stronger determining factor in the belief and incorporation of Hawaiian values. A physician participant described three subgroups of Native Hawaiians based on extent of assimilation: 1) individuals who have almost fully adopted the Western cultural norms and behaviors; 2) a sizable group of individuals who consider themselves to be bicultural; and 3) a small but growing group of rural, self-reliant nationalists. The latter two groups were seen to be more likely to resist Western notions of health, illness, and treatment. The first group, the more assimilated Native Hawaiians, tended to have higher incomes, to live in urban areas with better access to health care, and to have more positive attitudes toward Western medicine.[2]

Participants were fully aware that Native Hawaiians have historically been underrepresented in participation in health prevention and treatment services.[7] However, they were also keenly aware that this low rate of participation has resulted in Hawaiian populations being labeled by providers as, "difficult-to-reach, non-compliant, and/or uncaring about their health." This *blame-the-victim* attitude has resulted in little effort by practitioners and organizations to provide health services in ways that are more responsive to the needs and values of Native Hawaiians. Mokuau notes that although the concept of culturally appropriate services are not new among other people of color, such as American Indians and African Americans, it is a relatively new idea to offer culturally responsive services to Native Hawaiians.[18] The discussion group agreed strongly that this was a significant contributor to the disproportionately high mortality rates exhibited by Native Hawaiians. While culturally relevant services are now being implemented in different areas, efforts are too new to affect mortality rates.

Accessibility

The second focus of the discussion centered around the lack of access to health care services by Native Hawaiians. Inability to receive services, whether because of geographic isolation and/or cost, has been a major barrier for Native Hawaiians and has contributed to low participation in health services and poor health.[3,22]

Geographically, many Hawaiians are concentrated in rural communities that are distant from and separated by water from tertiary care facilities, eg, Waianae, Waimanalo, and the North Shore on Oahu, Hana, Molokai, West Kauai, and several districts on the island of Hawaii. In these areas, primary care is available but limited to a few providers, while consistent specialty care is not available at all. In addition, aggressive, leading-edge treatment modalities, such as those used in clinical trials, are rarely offered in these locations. Screening programs that are taken to the community and cosponsored by the community have been successful, but expecting individuals to travel far distances by themselves for screening activities is unrealistic. In reality, individuals in these rural communities must commute long distances by car or plane to access most health care.

Acknowledgment of specific geographic concentrations of Native Hawaiians was one of the motivations to decentralize the Native Hawaiian health care systems, rather than having them headquartered in Honolulu. While it is too early in the systems' development to determine their effectiveness on health status, there have been clear demonstrations on their ability to reach the rural Hawaiian populations. A physician shared that *Na Puuwai*, the system serving Molokai, *flies in* nutrition education and counseling services, prostate cancer screening and education, oral hygiene education and screening, and other services that are currently unavailable on the island. These programs have had a high response rate but remain tenuous because they are dependent on professionals who live on other islands, mainly Oahu.

Inadequate insurance coverage presents another significant barrier. Private insurance provides little coverage for health education and screening. The state's QUEST program provides for some screening, however, reimbursement is low and confusion over physician assignment still exists. Some physicians pointed out that perhaps in the long run the trend toward managed care will provide greater access to health education and screening, but the effects of this movement will not be seen for a while.

In addition to geographic isolation and inadequate insurance coverage, physicians noted that Native Hawaiians share other characteristics of a disadvantaged population. For example, they are more likely to be unemployed, to have a low educational attainment, to live in households headed by women, to be overrepresented in service occupations and farming, and to have the lowest income levels.[2-3] That these factors have a negative impact on health and longevity is already well known among health care providers and researchers.[23-24]

In terms of the differences in mortality rates between full- and part-Hawaiians, physicians noted that Hawaii has historically pursued a strategy to obtain funding for Hawaiians as a whole, rather than by subgroup. Differential access to services by the two groups, however, may be a reason for differences in mortality rates, as full-Hawaiians are even more likely than part-Hawaiians to be concentrated in the isolated and rural parts of the state.

Further Research

Finally, the Native Hawaiian physicians pointed out several areas for further investigation. First, they noted that the mortality findings of this study were based on retrospective analysis. They recommended that prospective risk-factor studies be undertaken to test more accurately the impact of specific intervention strategies.

Physician participants stressed the potential importance of genetic research, which could reveal genetic predisposition toward certain diseases. For example, recent research has shown the existence of *promoter* and *suppressor* genes and that abnormalities in either could lead to cancer. Advancing our understanding of genetic markers may lead to better targeting of screening and treatment efforts. This type of research could help sort whether the high mortality rates for full- and part-Hawaiians have a basis in genetics or are solely attributable to environmental and social conditions.

The physicians also expressed the importance of sharing the information of this study with full-Hawaiians. They said full-Hawaiians are *cultural treasures* and they would be the most appropriate to respond and share their understanding and perceptions of health, illness, and treatment. At the same time, recommendations for appropriate delivery of health care services can be solicited. For example, physicians thought it would be good to know how existing services could be made more culturally competent and how traditional healing and Western medical approaches could be used in tandem to increase access and improve outcomes.

Discussion

Native Hawaiian physicians were disappointed but not surprised by the finding of continued, and perhaps increasing, discrepancy in mortality rates between Native Hawaiians and all races in Hawaii. The physicians have seen these differences in their practices and have supported the efforts of the Native Hawaiian Health Care Acts to improve delivery of health services and increase the number of Native Hawaiian providers. They recommended more attention to the possible geographic, environmental, cultural, social, and genetic causes behind the differences in full-Hawaiian and part-Hawaiian rates. They did not, however, advocate increasing attention to the health of full-Hawaiians at the expense of part-Hawaiians, rather they said all Native Hawaiians needed increased services and opportunities.

Methodologically, the study was constrained by a number of issues. First, there is a degree of uncertainty about the accuracy of *cause of death*. Our physician respondents noted that many patients have multiple health problems and that the cause of death on the death record may not provide an accurate reflection of health status. Second, the method of reporting and recording ethnicity for population tracking has changed over the decade. For example, prior to statehood Hawaii census activities allowed residents to designate their ethnicity as part-Hawaiian. In 1970, however, the U.S. Census omitted this category which resulted in a reduction of more than 30,000 Native Hawaiians compared to the 1960 census despite the fact that Hawaii's local birth and death record statistics indicated a gain of more than 40,000 Native Hawaiians in the same time period.[25] Referred to as a *paper genocide*, this single act casts the 1970 denominator numbers into doubt. Since then, the Hawaii Department of Health has adjusted the U.S. Census figures using ethnicity distribution information gathered through its health surveillance program. Also since 1970, pride in Hawaiian heritage has increased, resulting in an increased likelihood that individuals with some Hawaiian blood will identify themselves as part-Hawaiian rather than some other ethnicity. In addition, the number of full-Hawaiians is decreasing as these individuals marry non-full-Hawaiians. These factors create a third problem, that of small numbers of deaths in some categories, especially for the full-Hawaiian population. This increases the confidence intervals and, thus, the uncertainty about the exact mortality rate making it harder to find significance in cross-group and over-time differences. To compensate, most investigators collapse full- and part-Hawaiians into a single category; however, this only lessens, but does not erase, the disparity between Native Hawaiians and all races in mortality.

The study of comparative health status in Hawaii can be enhanced by other means. First, mortality rates can be calculated for an additional group—all other races. This study is already underway by the authors and will most likely show even larger differences in mortality between part-Hawaiians and the remaining races in Hawaii. A related study is currently calculating the 1990 life tables for Hawaii's major ethnic groups to compliment earlier work by local demographers (H. Yang, unpublished data, 1995).[26-27]

Conclusion

As a follow-up to the 1982 Look report, the present study confirms that full-Hawaiians continue to be at greater risk of death from all causes than are part-Hawaiians and all races in Hawaii. The findings also suggest that, while mortality rates for part-Hawaiians are significantly lower than for full-Hawaiians, they are still significantly higher than for all races. In considering these data, Native Hawaiian physicians suggested a number of strategies: 1) increase understanding of cultural values, behaviors, and practices and their impact on health; 2) bring Native Hawaiians into the process in order to plan, design, and deliver services that better *fit* traditional Native Hawaiian values and practices; 3) target services to communities with high concentrations of Native Hawaiians, especially full-Hawaiians; 4) support exploration of genetic basis for disease; and 5) continue to refine and update health status statistics other than mortality to measure progress.

Acknowledgments

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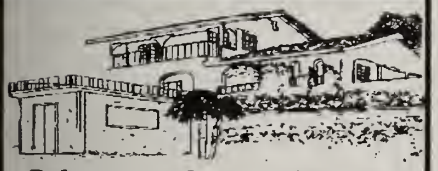
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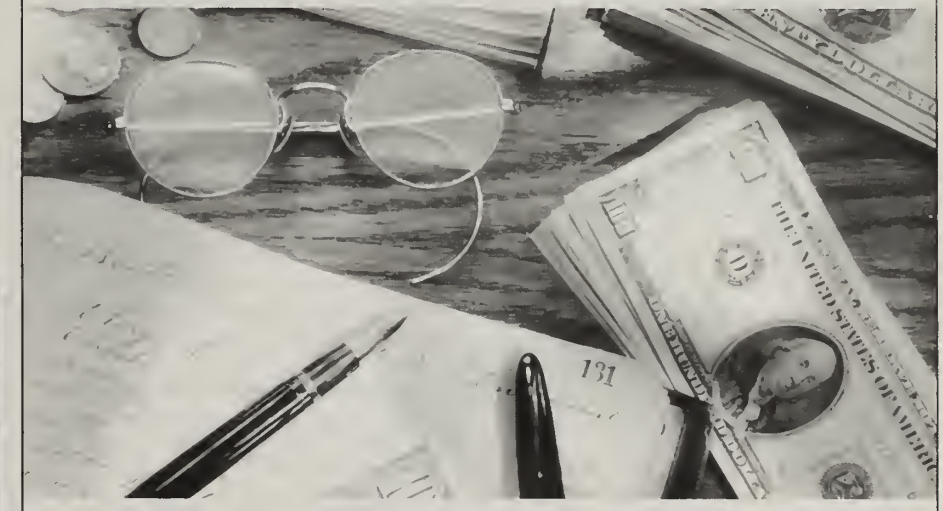


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Managed Care in Hawaii

Presentation by Kuakini Physicians Integration Advisory Committee members at a KMC quarterly staff meeting on June 9, 1995. (We thank the trio of physicians **Stuart Sugihara**, **Roger Kimura,** and **Mike Nagoshi** who are responsible for the following information re managed care models.—HNY).

Stuart Sugihara

"There is no doubt that the health care environment is changing. The driving forces are the larger payer groups who are looking for ways to lower heath care costs. One of the approaches is through capitation, where the financial risk is shifted to the health care provider, which will lead to radical changes in incentives and the conduct of all health care providers. The mind-set will have to shift from revenue generation to cost savings. We believe managed care has arrived in Hawaii. To what degree and how rapidly it will take hold is uncertain, but as the example of its presence are some statistics from HMSA. Since 1990, HMSA Plan 4 has dropped from 70% of total membership to 17% in 1994, while PPO plans have increased from 21% to 63%. HMO plans have increased from 9% to 20%, and by the year 2000, HMSA predicts a further increase to 40% of its total membership."

Roger Kimura

A working definition of managed care is: "Managed care is a means of providing health care services within a network of health care providers who are given the responsibility of managing and providing quality, cost-effective health care." A consultant says: Vendors control providers...The bottom line is *The best price wins*.

The various stages of evolving managed care markets are:

Stage I: Independent hospitals, physicians, employees and HMOs (Few affiliations).

Stage II: HMOs, PPOs and medical groups emerge (Loose provider network and weak hospital affiliations).

Stage III: HMOs, PROs and groups achieve control and begin to consolidate. (Hospital systems form and aggressively recruit/compete for primary care group practices).

Stage IV: Purchasers contract with integrated medical groups and hospitals/physician systems to provide comprehensive services (Capitation prevails). Hawaii is probably at Stage II.

Independent Practice Association (IPA)

An organization composed of solo and small group physicians who are aligned in order to access managed care contracts and still maintain autonomy.

- Serves as the legal entity that contracts with payers on a capitated basis or PPO discounted fee-for-service.
- Physicians remain independent.
- Low initial capital investment.

Negative Features

Unlikely to achieve cost control; preservation of physician independence may impede progress to sustainable models.

Open Physician-Hospital Organization (PHO)

A joint physician-hospital organization open to all medical staff members that negotiates contracts.

- Negotiates with payers on behalf of the hospital and a physician group, typically members of the active medical staff.
- Reduces cost through centralization of negotiations, clinical data collection of physician practice patterns and outcomes, and patient-care tracking information.
- Shared ownership, capitalization, and risk between hospital and medical staff.
- Usually shared governance between hospital and physicians even though hospital provides larger percent of start-up capital.

Negative Features

Often specialist-heavy; difficult to enforce utilization criteria; difficult to achieve cost savings; lack of cost-control may cause disadvantages in competing for contracts.

Closed Physician Hospital Organization

A PHO that functions similarly to an open PHO except physician membership is limited to a select group.

- Similar function as negotiator with payers as open PHO.
- Closed panel introduces concept of cost-efficiency standards, utilization standards; and the monitoring of physician practices in meeting these standards.
- Risk, capitalization, ownership, governance between hospital and physicians are similar to open PHO.

Negative Features

Difficult to determine criteria for physician selection; may have difficulty retaining PCP base as more attractive systems become available; over long-term, oftentimes evolves into specialty care services, contracting with integrated systems; favored treatment of select group of physicians may create sense of betrayal among other physicians.

Comprehensive Management Service Organization (MSO)

The health system purchases the tangible assets of physician practices then manages these practices and negotiates contracts. Physicians maintain separate legal identity and retain ownership of revenue stream.

- Physicians retain ownership of revenue stream and income distribution.
- MSO provides management services in exchange for payment by physicians.
- Operating expenses covered by physician fees/net revenue.

Negative Features

Initial investment costs are high; governance is shared by physicians and hospital; similar disadvantages of closed PHO.

Foundation Model

The health system purchases both the intangible and tangible assets of physician practices. Physicians remain employees of a separate professional corporation but sign professional service agreements with the foundation.

- Foundation controls 100% of physician revenue.
- System pays physician group which then distributes to individual physicians.
- Governance has both physician and community representation but is ultimately controlled by the system.

Negative Features

Strong loyalty to preexisting groups not erased; vulnerable to mass defection; inability to deal with individual physicians.

Staff Model

The health system directly employs physicians.

- Health system markets, negotiates with payers, and manages administrative functions
- May expand by buying physician practices and assets.
- Physicians work under a physician managed clinic and are employees of the clinic.

Negative Features

Without proper incentives, there is potential for a *9 to 5* mentality; massive capital requirements.

Equity Model

A for-profit physician group practice owns facilities of an integrated health system and employs physicians. Physicians are employees of the clinic and are given opportunity to purchase equity in the system.

- Physician group markets, negotiates, and administers.
- May either own or contract with a hospital for inpatient services.
- Group owns all assets, all contracts, sets individual compensation
- Governance by physicians.

Negative Features

Shortage of capital for expansion.

Continued on Next Page ➤

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Continued from Page 730
News and Notes

Life in These Parts

Honored, Elected and Appointed

Royal Randolph, Jr, of Wailuku was certified by the American Academy of Addiction Medicine. The Academy has certified 2,791 physicians nationwide as specialists in treating addiction, including alcohol and nicotine.

Jan Wong was named Cancer Liaison Person for the St. Francis Hospital Cancer Center and **Gene Robinson** for Kapiolani Medical Center Pali Momi. The program is sponsored by the American College of Surgeons' Commission on Cancer, which maintains the local cancer registry.

Quotables

"It's ludicrous to think separating smokers from nonsmokers is enough of a prevention for those worried about inhaling second hand smoke. It's like trying to swim in a unchlorinated part of a swimming pool."
(HMA President Fred Holschuh re restaurant smoking ban)

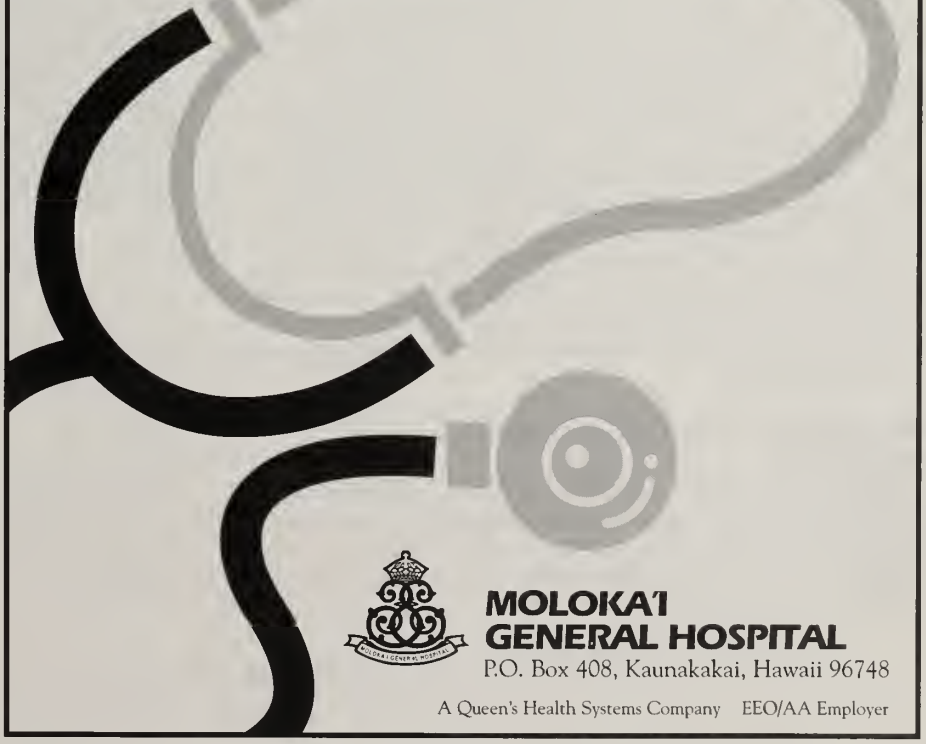
Miscellany

A surgical patient received her usual postoperative instructions, "No relations until after your postoperative check-up." That night she called wanting to know when her mother could visit.
(Barry Kramer MD in *Medical Economics*)

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The solution to the problem changes the problem.

The Florida Attorney General has filed suit claiming that a conspiracy exists to restrict the sale of contact lenses involving Bausch & Lomb, Johnson & Johnson Vision Products, American Optometric Association, and the Contact Lens and Anterior Segment Society. The claim is that pharmacies and mail-order houses should be allowed to sell contact lenses, claiming they can cut the price in half. An attorney speaking on behalf of the optometric association said the suit is unfounded, and limited distribution promotes optimum vision health by keeping professionals involved. Anyone with knowledge and experience knows that abuse of contact lenses is a frequent cause of serious eye disease, and such events would surely be compounded by the indiscriminate sale of contacts. As has been said so often and in so many ways: You get what you pay for—as price goes down, quality deteriorates—there ain't no free lunch—I can get it for you cheaper.

We use ideas merely to justify our evil.

The Supreme Court of the State of Michigan has ruled that Jack Kevorkian MD could be charged with murder in the death of two women on October 23, 1991. Prosecutor Richard Thompson said he has taken an oath of office to enforce the law and will not be deterred by the polls. Problem for the prosecution is that 71% support Dr Kevorkian, while only 22% believe he should be put on trial, according to Lansing–based EPIC-MRA poll. Put in the simplest terms: Should any person suffering from a painful, incurable, debilitating condition be deprived of the choice of a quick, painless death versus a prolonged painful one? Of course, the difficulty for medical practice is that life and/or death decisions rarely occur in simplest terms, and in any case organized medicine could never endorse the judgment of a single physician to make that decision.

The whole of life is but keeping away the thoughts of death.

In case you have taken the casual road regarding the incidence of melanoma, pay attention. An American Academy of Dermatology study published in *The Dermatologist* reports the actual incidence of this potentially fatal cancer is 32/100,000, three times the 10.7/100,000 reported by the American Cancer Society's SEER program. And contrary to the SEER study, which reported in the mid 1980s that the incidence of melanoma was leveling off, the AAD report clearly shows a dramatic increase. In 1982 the mean number of new tumors seen by a dermatologist was 6.2. In 1992, the number had jumped to 10.7. Doctors have conjectured for years that the pigmented lesion of FDR's left brow was a melanoma and might well have been the cause of his deterioration and death in April 1945. No postmortem exam was done.

The more I see of men and women, the more I admire dogs.

What goes around comes around. A woman's lawsuit claimed her malpractice suit against a cardiologist failed because her lawyer should have picked a *better* expert witness. Second-guessing lawyers used to be rare, but now when things go wrong, more and more clients see their lawyer as just another deep pocket. Lawyers did so much to create the litigation hysteria in our country, but now find themselves hoisted on their own petard. And like sharks in a feeding frenzy, plaintiff's attorneys are quite willing to feed on one another. It is both humorous and ironic to us innocents in medicine that disgruntled clients are blaming lawyers, even in marginal cases such as that mentioned above. From 1986 to 1994, legal malpractice insurance climbed 63% to $4,601. Not huge by medical standards, but the Attorneys' Liability Assurance Society (ALAS—what an acronym), the largest U.S. insurer of big firms, has upped its premiums at least 20% each year for the last five years. Now if only we could sue for legislative malpractice, we would see rapid tort reform.

Washing hands is probably a good idea.

Eleven days after birth, a baby was readmitted to the hospital for treatment of an eye infection. At 8 months, he was found to have pneumocystis pneumonia; antibody testing showed he has AIDS. Careful investigation showed that the parents and hospital staff all tested negative for HIV, but medical authorities established that the same health-care workers caring for the baby had performed procedures on an HIV-infected child on the ward at the same time. Moral-universal precautions in such settings must prevail to prevent the spread of bloodborne pathogens.

Having no talent is no longer enough.

At Yale University (legal uterus of the first family), neuroscientists have proven that men and women do not think alike. When performing given language functions, men use an area in the left side of the brain, and women use that same area plus a similar area on the right side. Feminists were delighted with the data claiming that it clearly shows why so many men are halfwits, while MCPs claimed that it demonstrates a scientific basis showing that women cannot make up their minds.

For certain people, after 50, litigation takes the place of sex.

A woman golfer sued the country club when her own golf ball ricocheted off railroad tracks that ran through the course and struck her in the nose. The Maine Supreme Court ruled that the club has assumed safety responsibility for the tracks, and sustained the jury's award granting the woman $40,000. And that's nothing to sneeze at.

Addenda

- The percentage of Americans who are functionally illiterate, ie, unable to fill out a job application, follow written instructions, or read a newspaper—23%.
- The recommended daily dose of fat for an adult is 65 grams. Grams of fat in a turkey sandwich: 6, roast beef sandwich: 12, BLT: 37, veggie sandwich: 40, tuna sandwich: 43, Reuben: 50.
- The percentage of women who give their cars names, 16%; percentage of men, 10%.
- Never invest in anything that eats.

Aloha and keep the faith.—rts. ■

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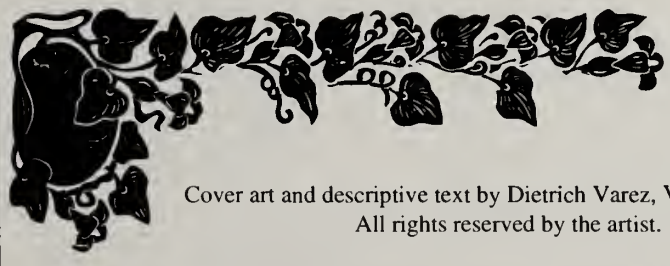
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Young Maui and Hina the Goddess

Wary as weary mothers might be concerning their son's doings, the goddess Hina, too, had a handful with her own young son, Maui.

Some soldiers had come by the young Maui's favorite fishing spot and taken him captive. Hina's pet guardian owl had witnessed the capture of the boy and reported it to Hina. The owl led Hina to the seaside temple where young Maui was bound for sacrifice the next morning.

Near the canoe landing by the temple, Hina made her bed for the night. She caused the moon to appear and made the night so still and long that even the temple guards fell asleep. The owl flew silently in and cut the boy's bonds.

Hina hid her son under a large flat rock as the morning came. She sat there innocently pretending to pick fleas out of her bedding as guards searched for the missing boy.

Editorial

Norman Goldstein MD

This issue of the *Journal* containes two manuscripts dealing with the delivery of health care.

Paul Tamura MD, the dean of Hawaii pathologists and a highly respected physician with a wide range of clinical experience in Hawaii, discusses, "After five decades, can health care costs be controlled without sacrificing quality?"

Another Paul, University of Hawaii medical student Paul Sunderland, shares his project, "A Survey of Hawaii Physicians' Attitudes on Health Care Reform."

No, we are not forgetting the clinical manuscripts we publish in the *Journal*; we do have many waiting in the wings. But, before we get to current clinical and research papers, next month will be another very special issue.

Guest editors Al Morris MD and John Breinich MLS, Director of the Hawaii Medical Library, will present The History of Medicine in Hawaii.

Are you aware we have a Hawaii Society for the History of Medicine and Public Health? The Society meets monthly at the Medical Library. Call David Morens MD at 956-8601 for more information.

HMA President's Message

Frederick C. Holschuh MD

This will be my last message as your president. I want to again express my appreciation to all the officers, past presidents, HMA staff and members of Council and wish Dr Lehman the very best this coming year.

I would like to reprint two recent comments regarding our great profession.

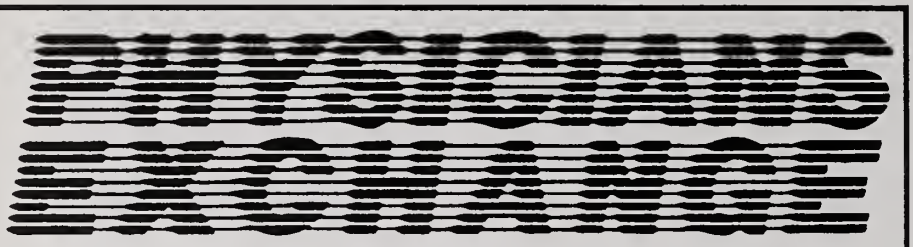
Dr Steven Hiltabidle, my mother's surgeon in Annapolis, Maryland, from a news article announcing his retirement said, "My timing is probably just right. I practiced during a time when you were judged by the quality of the work you did and your patient load was judged by that fact, rather than by how many HMOs you joined. After 40 years of being a doctor, you know pretty much what to do and you don't like being second guessed by someone who's a relative novice with the goal of saving money which has very little to do with the quality of care."

Donald Seibert, president of the Integrity Group, a provider credentialing system, said at a recent meeting, "The only lasting way to reduce health care costs is to improve quality."

Finally, some congratulations to Dr Kris Kumar for receiving a national "Exemplary Psychiatrist award"; to MIEC on its 20th anniversary; to Dr Cyril Goshima for his courageous stand in a recent lawsuit; to Dr Andy Don for his work on attempting to establish a statewide IPA; to Dr Dan Canete and everyone involved in the Vision 2000 process; to Dr Cedric Akau for an excellent sports medicine meeting; to Drs Florence Chinn and Shay Bintliff for an excellent workshop on family violence; to Dr Duke Bainum who makes us proud, to Drs Livingston Wong, Linda Wong, Alan Cheung, and Whitney Limm who were all featured in a very positive article on organ transplants; to Drs Kim Thorburn and Terry Allen for their stance on prisoners' rights, and finally to HMA past president Dr Cal Sia who has been nominated as one of two candidates for the vice presidency of the American Academy of Pediatrics.

And, to all of you who work so hard daily taking care of sick people to make their lives better. To all of you who work to improve the *health* of our society. To all of you who are never publicly thanked or written about or praised with awards. To all of you my heartfelt congratulations and thanks for all you do. ***You are the profession.***

Aloha and Mahalo,
Fred



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June M. Morioka, RN, Manager

Medical School Hotline

Student Profile (Class of 1999) at the John A. Burns School of Medicine

Satoru Izutsu PhD
Associate Dean and
Chair, Admissions Committee

The seventh group to undertake medical education in the format of problem-based learning began their journey to becoming physicians on August 2, 1995. The 27 women and 29 men were selected from a total of 1,631 applicants from throughout the United States. Two hundred thirty-three qualified to be interviewed. Of the 56 students, three are from out-of-state, two from the mainland U.S. and one from Kwajalein Atoll.

The average and median age is 23. A first for the John A. Burns School of Medicine is the admission of the youngest student, a 17 year old. The class is ethnically diverse with 15 Japanese, 13 Chinese, 9 Filipinos, 7 Caucasians, 5 Hawaiians, 2 Other Asians, 1 East-Indian/Pakistani, 1 Korean, 1 Mexican-American/Chicano, 1 Palauan, and 1 Vietnamese.

From a pool of 68 applicants, eight of the incoming class members qualified for the Kulia Program. This is an affirmative action program for underrepresented minorities in Hawaii who are also socially and educationally disadvantaged. Upon graduation, the goal will be to serve in Hawaii and the Pacific communities.

Eleven of the students graduated from Iolani, 10 from Punahou and 3 from Kamehameha. Two students came from each of the following high schools: Baldwin, Farrington, Kalani, McKinley and St Louis. Fourteen students came throughout the island high schools, 5 from the Mainland, 1 from China and 2 from the western Pacific.

Thirty-seven attended public colleges, 18 graduated from private colleges, and one is a graduate of a foreign college. Thirty-six percent of the class are alumni of the University of Hawaii. The remainder comes from colleges throughout the United States such as UCLA, Stanford, Harvard, University of California (Berkeley, Irvine, Santa Barbara and San Diego), Boston University, Brown University, Carleton College, Columbia, Johns Hopkins, Santa Clara, University of Montana, University of Notre Dame, Wellesley College, Willamette University and Fudan University (China). Fifty-five earned their bachelor degrees, six have masters, and one holds a doctorate in biology.

Represented among college majors are: biology, psychology, chemistry, zoology, biochemistry, electrical engineering, genetics, history, microbiology, anthropology, biological sciences, business administration, biophysics, cell biology, East Asian studies, English, kinesiology, neuroscience, physics, political science, and economics.

The 13 member (7 women and 6 men) Admissions Committee is a standing committee of the School which meets from September to May. The Dean appoints the members who serve staggered terms, two or three years. Committee members represent the basic and clinical sciences of the school of medicine, the major ethnic groups in Hawaii, and the community at large. In addition, there are 59 interviewers appointed by the Dean.

The Problem-Based Curriculum, talented medical students, the diversity of students (ethnically and educationally), the emphasis of medical education as a community partnership, and a dedicated faculty continue to identify the John A. Burns School of Medicine as one of the most innovative and unique medical education programs in the United States.



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Survey of Hawaii Physicians' Attitudes on Health Care Reform

Paul Sunderland, Medical Student II*

Hawaii is more important in health care that its size suggests. It is the first state in the U.S. to have mandated employer-funded health insurance for all workers, and to realize near universal coverage for residents. Because of that, the U.S. can benefit from the experience of those who deliver health services to the people of Hawaii. To determine some of the problems in the current system and what physicians see as solutions, a study of the attitudes and experiences of local physicians was conducted.

Introduction

Health care reform is likely to be one of the most hotly debated issues of the decade. It is something that most people are passionate about for good reason: the outcome will affect everyone deeply, whether they are medical professionals or consumers. As the current system of care is subjected to increased scrutiny and various political and special-interest groups continue to emerge, the core issues and possible solutions will undoubtedly change rapidly, just as they have over the past year.

Unfortunately, physicians thus far have played only a minor role in the reform process, often pushed aside by the bureaucrats and lobbyists who have their own agendas. People appear to have forgotten the physician's place in all of this, the knowledge, experience and insights that should be gathered from those who will have to carry out whatever changes are eventually mandated.

The purpose of this project is to offer a small remedy to this problem, to take a look at what a sampling of Hawaii's doctors believe are the shortcomings of the present system, and what the solutions are that will serve us best.

Methodology

The method selected for gathering data for this study was a mailed self-administered survey of a random sampling of local physicians. One hundred eighty questionnaires were mailed; 101 were returned, for a 56% response. A sample of 100 physicians out of the total population of approximately 1,600 Oahu doctors who are in private sector practice gives a reliability of plus or minus about 9 percentage points at the 95% confidence level.[1] However, because of the homogeneity of the data (in many instances high proportions of the respondents gave similar answers), the reliability is substantially greater than the calculated plus or minus 9 percentage points.

A complete listing of physicians with mailing addresses was not available. To generate the sample, the alphabetized listing of Oahu's doctors from the Yellow Pages of the telephone book was integrated with a directory of Kaiser doctors. From this combined listing, the names and addresses of questionnaire recipients were selected by systematically pulling every ninth name, to come up with a total of 180 physicians for the mailing.

Objectives

The survey accomplished the following objectives:

- Identified problems affecting the consumer that physicians perceive to be the most in need of reform
- Identified problems that are a top priority for reform because they affect physicians and their practices
- Determined opinion about how much change the current system needs and how large a part government should play in this effort
- Provided information about how reform might affect various aspects of a physician's life and practice
- Established which actions physicians want taken to implement change
- Provided demographic information on physicians and their practices, to permit an internal comparison of how such factors as years in practice, type of practice, annual income, and other matters affect opinion.

Overview of Survey Results

- Physicians appear to be passionate about health care reform—based on the language they used to answer many of the questions—whether they favor or oppose the various options under consideration by Congress.
- The two top issues identified as critical health care problems in an open-ended question were the rising costs of care and the need for universal coverage.
- Tort/malpractice came up frequently, too, as an area critically requiring reform.
- The top priorities for change (in response to a closed-ended question) were tort and medical liability; health insurance for those who can't afford it; and the overuse and abuse of health care services by consumers.
- Many physicians are resentful about HMSA's dominance in the market here, and that carrier's effect on fees and treatment decisions.

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• There is a strongly held belief that government is involved too much in health care and that reform should not be orchestrated at the federal level.

• Despite the animosity that doctors expressed about government intervention, most of them nonetheless observed that Hawaii's government-mandated health plan has resulted in a system with more good points than bad.

• A substantial majority believes the nation's health care system as it is now works fairly well and needs only limited change rather than a complete rebuilding.

• Hawaii physicians are surprisingly unenthusiastic about the satisfaction they get right now from the practice of medicine, and they anticipate even fewer rewards in the future.

• Most physicians believe that in the coming years they will have less freedom in treatment decisions, lower earnings, and more paperwork. A lesser majority also predicts the overall quality of patient care to be diminished in the future.

• Earnings for Hawaii physicians are right at parity with those reported nationally. The physicians with the highest incomes in Hawaii are men, those in practice more than 10 years, specialists, and those working on a fee-for-service basis.

Physicians' Attitudes on Health Care Reform

The questionnaire opened with a request that physicians cite in their own words what it is they consider to be the single-most critical problem in health care delivery in the United States.The advantage of such an open-ended question is that it provides the opportunity for respondents to discuss any item without having to adhere to a set of predetermined answers.[1] Physicians' responses were tabulated and grouped into categories, from the highest proportion of response to the least (Table 1).

There are three tiers of concern based on the proportion of responses. The cost of health care and its availability were each named by roughly two of every 10, putting them in a strong first and second place in the top tier of response (21% and 19%, respectively). The need for tort reform was a *second-tier* response cited by more than one in 10 of all physicians (11%), but far behind the two dominant issues of cost and access.

Every other health care delivery problem was named by fewer than 10%. The politicizing of health care—intervention by government—was in fourth place, named as the number-one problem by 8%, followed by complaints about insurance carriers such as HMSA (7%), and the costs attributable to the management of extreme cases: neonates, geriatrics, transplantation and HIV-related conditions (7%). Consumer practices and abuses were next on the list, implicated by 6% as a critical problem in health care. (Some explanations given were poor health habits such as smoking, improper diet, lack of exercise, and the unreasonable expectations patients have about what medicine can *fix*.) In a tie at 6% were matters related to the burgeoning growth of managed care—that is, the undermining of the doctor-patient relationship, decreased freedom in making clinical decisions, and increases in paperwork.

Table 1.—Single-Most Critical Health Care Problem*

	%
• Costs/high costs/affordability	21
• Need for universal converage/access care not available to all	19
• Need for tort reform/current need for defensive medicine	11
• Gov't regulations and intervention/the politicizing of health care	8
• insurance company intervention/mismanagement/low reimbursements	7
• Cost/management of extreme cases (neonates, geriatrics, organ transplants, HIV-related, etc)	7
• Consumer practices and abuses (poor health habits, unreasonable expectations, entitlements, etc)	6
• Problems with managed care (paperwork, undermining Dr/Pt relations, lack of autonomy, etc)	
• Other miscellaneous	11
• No response	5
Sample size: 101	

*Note: This open-ended, free-response question asked physicians to cite the single-most critical problem in health care delivery. When multiple answers were given (as was frequently the case) the first problem listed was the one tabulated.

Table 2.—How Much Change to the U.S. Health Care System is Needed

	Hawaii %	Nationally[3] %
No change	2	1
Limited change	75	54
Complete rebuilding	16	45
Not sure/no response	8	
Sample size	*101*	*5,324*

In comparing these local findings with Mainland survey data for 1992,[2] when a near-identical open-ended question was asked, nearly one-third of U.S. doctors (32%) said that the main problem facing health care is high or rising costs. Hawaii's doctors also saw costs as the primary concern, but they were less strongly focused on that one priority and also said that universal coverage—having care available to all— is virtually as important as rising costs. In contrast, the need for universal coverage was in a distant second-place ranking among Mainland physicians.

The third most-frequently cited problem by Hawaii physicians was that of tort reform and the need to practice defensive medicine (11%). In comparison, only 4% of U.S. physicians said this was of primary concern.

How much change is needed?—Hawaii's physicians strongly advocate only limited change to the U.S. health care system (Table 2).

When asked whether our nation's health care system requires "no change," only "limited change," or "complete rebuilding," 75% opted for just limited change; only 16% said the system needs to be completely rebuilt.

Compared to Mainland doctors,[3] local physicians are far less

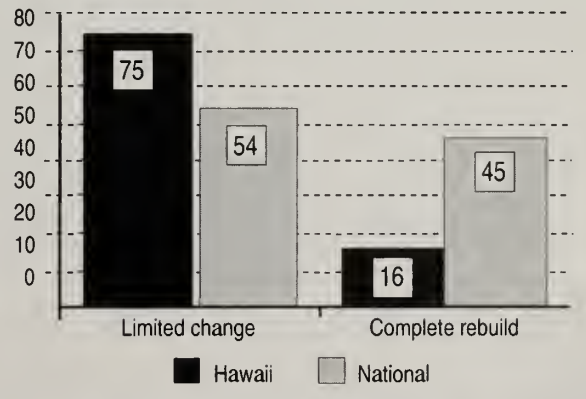


Fig 1.—Desired Change—U.S. Health Care

apt to think the system needs complete rebuilding (Fig 1). Nationally, 45% want to overhaul the entire system.

Federal involvement—the problem or the solution?—According to responses concerning the role of the federal government in health care reform, the consensus among Hawaii physicians is federal government is far too involved in any reform of the nation's health care system. Three in four called the government "too much involved" in reform (Table 3). One in five believe its involvement is "about the right amount" (16%) or is too little (4%).

Table 3.—Attitudes on Federal Government's Involvement in Health Care Reform

	(%)
Too much involvement	75
About the right amount	16
Too little involvement	4
Not sure/no response	5
Sample size	*101*

Although the sample size and the homogeneity of responses precluded any extensive cross tabulations with statistical significance, a few trends in the data regarding this question were noted in reviewing the raw percentages. For example, 89% of the youngest group of practicing physicians, those who have been in practice for less than five years, said the federal government's involvement in health care reform was too much, while the group least likely to say "too much government involvement" were the doctors who have been in practice for more than 10 years.

Primary care doctors were slightly more inclined to mention "too much involvement" than their colleagues in specialties (81% versus 73%, respectively). Likewise, physicians whose primary mode of compensation is fee for service claim government over-involvement more frequently than their salaried peers—81% versus 70%, respectively. (The sub-samples these differences are based on are very small, and therefore the findings may be unreliable. They are presented for the reader's interest.)

Consumer issues deemed critical for reform.—The survey respondents were asked to evaluate a list of possible reforms that could be addressed by Congress, and to rate each one as to whether it is a critical need for reform, a need that's "important, but not critical," or whether it is something that does not need reform (Table 4). The figures shown on that table are ordered from left to right by the strength of the response—that is, by the proportion of physicians who called each one critical. The category on the far left is therefore the one seen as most critical.

Table 4.—Perceived Importance of Health Reform Issues

	Insurance for indigent	Consumer abuse/ overuse	Coverage for preexisting conditions	Preventive care	Insurance portability
	(%)	(%)	(%)	(%)	(%)
Critically needs reform	59	50	49	44	39
Important but not critical	34	45	49	44	54
Does not need reform	6	6	2	13	5
No response	1				2
sample size	*101*	*101*	*101*	*101*	*101*

Three issues were viewed as critically important in any reform bill considered by Congress by half or more of the physicians. Top ranked, with 59% calling it critical, is "health insurance for those who cannot afford it." In second place, half of all doctors believe that "overuse, fraud, and abuse by consumers" is of critical concern. Third, "coverage for preexisting conditions" is of critical importance to 49% of physicians.

The four remaining issues evaluated were deemed critical by fewer than half of all respondents. Forty-four percent said that preventive care is a critical issue, and insurance portability is critical to 39% of respondents, followed by caps on health insurance premiums at 26%. At the far right side of Table 4, trailing all other issues, was concern over the ratio of specialists to generalists. That was seen as a critical factor to only 13% of the physicians.

Physician issues deemed a top priority for reform.—Table 5 displays the results of a similar follow-up question that asked doctors to also prioritize a number of issues, but this time they were more directly relevant to physicians than consumers, such as tort reform. The respondents were asked to catalog each item according to whether it was a top priority for change, a moderate priority for change, or a low priority for change. Again, the table is organized from left to right, from the highest priority for change to the lowest.

Physicians obviously are adamant about wanting tort reform for medical liability. More than eight of 10 doctors (84%) isolated this issue as being a top priority for health care reform, and not a single individual rated it lower than a moderate priority. In a distant second place—with 47% calling it a top priority—was clinical autonomy, that is, freedom in doctor-patient relationships. The three other issues discussed here—a reduction in physicians' administrative duties, antitrust relief, and reimbursements—were each called a number-one priority by one-third or fewer of the doctors interviewed. Figure 2 gives a graphic representation of these priorities, showing the dominance of tort reform.

Table 5.—Priority of Health Care Issues Concerning Physician

	Tort reform/ liability	Clinical autonomy/ freedom	Reduction in administrative duties	Anti-trust relief	Reimbursements
	(%)	(%)	(%)	(%)	(%)
Top priority for change	84	47	34	28	24
Moderate priority	16	42	48	47	60
Low priority for change		11	19	21	13
No answer		1		5	3
sample size	*101*	*101*	*101*	*101*	*101*

Comparison of critical and top priority issues with Mainland studies.—The last two questions discussed above asked physicians to rate various issues according to their significance to any health care reform bill being considered. For this survey the issues were divided into two groups: those of more concern to consumers and those more directly important to physicians.

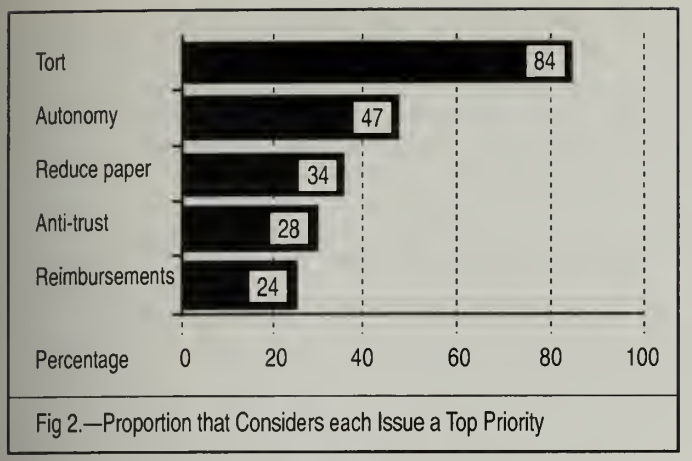


Fig 2.—Proportion that Considers each Issue a Top Priority

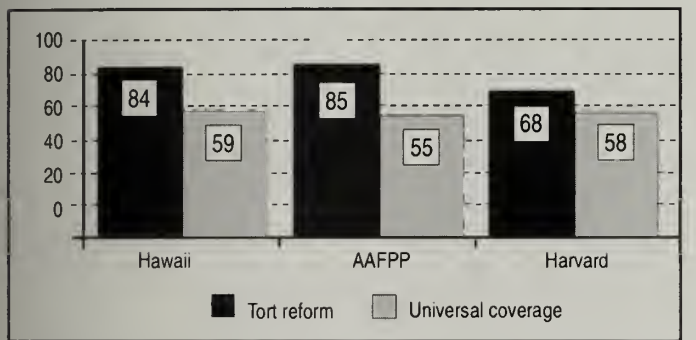


Fig 3.—Comparison of Hawaii and Mainland Findings: Priority Issues

There are national data to compare with these findings (Fig 3), however, those nationwide questions did not separate the issues into consumer and physician areas, but instead grouped them together. Despite this, there are several commonalities: malpractice/tort reform is the first-ranked priority in both the AAFPP survey[4] and the Harvard School of Public Health/Times Mirror study,[5] just as it is in Hawaii.

Another similarity is the marked concern physicians have for the provision of health insurance for the indigent and universal coverage. On this issue, responses from Hawaii's physicians were analogous to those cited by the Mainland studies; that is, they all were between the 50th and 60th percentile. Furthermore, more than 50% of Hawaii doctors, like their Mainland counterparts, claim that burdensome regulations, paperwork, and loss of clinical autonomy are high priority problems that should be examined closely.

Hawaii's system—good or bad?—Despite doctors' strong response that there is "too much government involvement in health care" and the pervasive role of government in Hawaii's medical system, more than half the doctors (51%) say the good points of our State's system outweigh the bad (Table 6). This finding is in response to a question that was introduced by the phrase: "Some believe that the health care system here can stand as a model for the nation, while others think the picture is not so good..." Respondents were then asked to decide whether the good points outweighed the bad, the bad points outweighed the good, or whether a balance between good and bad had been attained.

A 51% majority believes the good of the system outweighs the bad, versus only 13% who see it as more bad than good. One-third (33%) said the good points balance the bad points and together they are about equal.

Table 6.—Physicians' View of Hawaii's Health Care System

	(%)
More good than bad	51
More bad than good	13
About equal	33
Not sure/no response	4
Sample size	*101*

Several wrote comments in the margin near this question. One doctor, who agreed that the system here was more good than bad, said that this was "Mainly because our near-universal coverage in Hawaii outweighs the bad points." Another who voted on the same side added: "However, the cost of living goes up, and small businesses may stagger under the burden placed on them." A doctor who said the system was more bad than good also wrote a comment saying, "Hawaii's system works because of the professionalism and the charity of the physicians, not because the system is good."

Solutions to the problems.—The close of this report section show the dominant categories of solutions when physicians were asked to name first, the single-most important action that could be taken to improve health care in Hawaii and, second, the most important action that could be taken toward health care improvement in the United States overall.

For Hawaii, the need for insurance reform was cited more often than any other positive action that could be taken here, and most of the physicians who discussed that issue pointed directly at HMSA as a major culprit. They left little doubt that HMSA's near-monopoly of the medical marketplace is a substantial advantage to that carrier's influence and a significant disadvantage to doctors.

Other actions that were frequently mentioned in connection with improving health care in Hawaii were, once again, tort reform (in second place, following insurance reform), consumer education about good health habits and the real costs of health care (in third place mention), and the need to get the government bureaucracy out of medicine (fourth place).

All other issues were each mentioned by just five or fewer, including that employees should bear more of the cost of their own health services, that managed care has numerous drawbacks, that a single-payer system of health insurance would be desirable, and a score of others.

For the United States as a whole, there were two principal issues of importance named: again, insurance reform came in first (although comments here were more often about universal coverage rather than displeasure with any providers), followed by getting medicine out of the hands of the bureaucracy (which ranked a close second). The remarks about government's intervention were often in colorful terms and the tone in which they were offered showed quite clearly the emotion that surrounds the issue of bureaucratic control.

Opinions about the Future of Health Care

This second section documents responses to a series of questions that asked physicians to predict whether several aspects of health care delivery would be better in the future, worse in the future, or would stay about the same as now.

Physicians say the future of health care is bleak.—Doctors are pessimistic about future working conditions in their profession. For the near future they predict: more paperwork, less freedom to make treatment decisions, a lower income, and reduced quality of patient care (Table 7).

About eight in 10 physicians predict that in the near future they will have less freedom to make treatment decisions concerning patients and will receive lower earnings. More than three in four in (76%) believe that the amount of paperwork they'll have to do will increase, too. Although a majority of the doctors also think that the quality of care will decrease in the future, there were fewer expressing pessimism about this matter than about the others. Fifty-eight percent see patient care deteriorating, 27% think patient care is unlikely to change, and 10% believe it will improve.

Table 7.—Forecast of Practice Conditions Five Years Down the Road

	Freedom in treatment decisions	Expected earnings	Amount of paperwork	Quality of patient care
	(%)	(%)	(%)	(%)
More/higher	5	2	[76]	10
Less/lower	[82]	[79]	11	[58]
Little/no change	11	16	8	27
Not sure/no answer	2	3	5	5
Sample size	*101*	*101*	*101*	*101*

In every instance there were only small minorities who were optimistic about the future. The least optimism was about future earnings, with just 2% holding the expectation that physician income would increase in the future.

Several trends in these forecast data were noted. The lowest earnings group, those receiving less than $125,000 per year, and fee-for-service physicians had the most pessimistic outlook toward the future. Primary care doctors showed greater concern about future freedom in treatment decisions than their specialist peers. Specialists were more negative than generalists about earnings and quality of care.

Dismal predictions—a local finding or nationwide trend?—A comparison between Hawaii's doctors and those nationally[6] show that both groups anticipate a gloomy future. The findings were strongly parallel (Fig 4), with substantial majorities taking the negative side on every issue. The main differences were that Hawaii physicians took an even darker view than their Mainland counterparts about matters of increased paperwork and lower earnings.

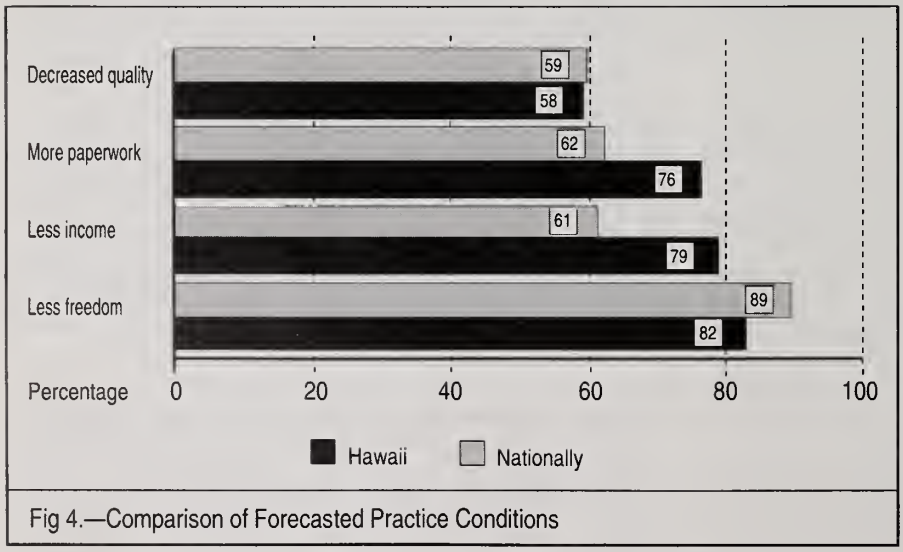


Fig 4.—Comparison of Forecasted Practice Conditions

Current and Future Career Satisfaction

To assess their current and anticipated levels of satisfaction from the practice of medicine, physicians were asked to circle a number in a range of one to 10. They were instructed that a number one represented conditions that are "as bad as it gets," and a number 10 was "as good as it gets."

Doctors are not only pessimistic about working conditions in the future, as we saw in the previous report section, they also anticipate reduced enjoyment from the practice of medicine as these figures show. While a 40% plurality places their current satisfaction with the practice of medicine in the 7 to 8 range, looking five years down the road the plurality expects to have job satisfaction they rated below a 5—that is, on the "as bad as it gets" end of the spectrum. Table 8 shows both the percentages who chose each number range from the scale and the mean rating for all respondents combined. (The numbers on the table have been grouped into categories because of the small sub-samples for each individual numeric rating.)

Even the current satisfaction rating, the mean of 6.7, seems lower than anticipated and counterintuitive to what many observers would expect, given doctors' standing in the community and the years they spent preparing for their profession.

Table 8.—Current and Anticipated Satisfaction from the Practice of Medicine

	Current satisfaction	Anticipated satisfaction (5 yr. Projection)
	(%)	(%)
Satisfaction rating		
1 to 4	14	[38]
5 or 6	28	32
7 or 8	[40]	22
9 or 10	19	9
mean rating	6.7	4.9
sample size	*101*	*101*

Key: On a 1 to 10 scale: 1= as bad as it gets, 10= as good as it gets

Demographic Characteristics of the Survey Population

The demographic characteristics of the physicians who responded to the survey are divided into the following categories: years in practice, type of practice, mode of compensation, gross annual earnings, and sex.

The median time in practice for all physicians in the survey was 14 years. About 60% have practiced for more than 10 years.

A special section for the publications of The Hawaii Professional Media Group
Hawaii CPA News • Hawaii Dental Journal • Hawaii Medical Journal
Compiled and edited by Lori Arizumi
Articles and information contributed in part by the Publications
Committees of the Hawaii Society of CPAs, Hawaii Dental Association
and Hawaii Medical Association.

special section

HEALTH AND WELLNESS



* * * HEALTH AND WELLNESS * * *

A special section for the publications of
The Hawaii Professional Media Group—
Hawaii CPA News
Hawaii Dental Journal
Hawaii Medical Journal

Keep Moving — for a Healthy Life



Contributed by Angela Sy, M.P.H.

Don't be a square. Start thinking of exercise in fun (and interesting) ways.

Think of exercise as a means of making yourself more fit, and something your body needs. In this way, any physical activity is better than no activity.

Start with small steps.

+ Setting a goal of running 15 miles a week and lifting weights for an hour every other day may lead to frustration and disappointment when this is not easily accomplished.

+ Setting a goal of walking three miles at the onset is much more achievable, and although this may seek like too little exercise, this is already one step more than what you may not be doing right now.

If you are already a regular exerciser, don't quit.

+ At least don't give up on the physical activity part.

+ Keep your fitness program interesting so that you don't quit exercising altogether.

+ For example, try adding more physically oriented leisure activities, especially during the weekends. (Don't let our beautiful island weather go to waste!) Go on a hike, go to the beach with your family and take a little time to go for a swim, play tennis with friends, work on your yard or gardening.

+ Start a new activity altogether. Walkers could add some light hand weights, or begin to jog every other workout. You may want to consider investing in a stair stepping machine or treadmill; these now come in a variety of models and price ranges. The best part about these machines is that you can watch TV at the same time!

Exercise is a way to keeping your body healthy. This healthiness will become apparent through your increased physical fitness, endurance throughout the day, and a toner and even slimmer body. It doesn't really matter what form of exercise you take up, just remember to *KEEP ON MOVING!*

The Last Diet

By Gwen Tani, R.D., M.S.
Registered Dietician
Public health Nutritionist

What does everyone want in life but not everyone is willing to pay the price? Simple -- a trim, fit and healthy body. Look around you at the masses that are destined to try again and again for shortcuts. I'm sorry to say, but there are none.

But there is hope. The only way to step off the on-again-off-again diet treadmill is to find a weight-loss program that helps you lose weight slowly and steadily; one that trains you to adopt a healthy low-fat eating plan that is so simple to practice, it becomes a natural way of life. Having said that, here is an introductory guide to the last diet you may ever need.

* **Stop Counting Calories.** Losing weight doesn't have to mean caloric deprivation. The best diet foods are low in fat; rich in complex carbohydrates, vitamins and minerals; high in bulk so you feel full on fewer calories. This doesn't give license to pile up the sweets and fats, though.

* **Limit Your Animal Protein.** Eat no more than two servings of animal protein (meat, fish, poultry) per day. A serving is the size of your palm (circumference and depth) and no fingers please!

* **Dull Your Appetite.** Drink a glass of water just before a meal. Have a total of eight to ten glasses of water daily. And no, you won't drown.

* **Eat Slowly.** Chew your food and take at least 20 minutes to eat your meal to give your body time to release the enzymes that tell your brain that you have eaten enough. If your mind is racing a mile a minute, so is your mouth, so relax a little.

* **Sit Down.** Eat your meals at a table and not standing in front of the refrigerator or sink. It's too easy to overeat and to be impulsive while on the run. Make eating an adventure in itself.

* **Eat Breakfast.** People who have breakfast start their day off strong and are less likely to give in to rash food choices. It gives you time to make smart choices and not be so ravished that you grab the first thing you see.

* **Exercise.** It burns calories, suppresses the appetite and makes you feel good. It's hard to lose weight without exercising. This doesn't always mean a new wardrobe and gym pass; just 20 minutes a day would suffice.

STRESS - A KARATE KICK ON THE JOB



By Art Pryor

If you're a professional you've got stress. "Oh!" you say, "Do I have stress? Let me tell you about my stress ..."

Since you know you've already got stress this article will give you some background about what goes on in your body when you're stressed and how those "goings on" can change your behavior. Hopefully, from that, you'll be better able to see and feel stress as it occurs and manage it more effectively.

Stress is kind of like a karate kick in the solar plexus. You know when its happening to you (unless you're used to living with it, in which case your health is at risk).

The "stress response," as its commonly known, is the *"fight or flight syndrome"* you studied in high school biology. You remember: primitive man bumps into a sabre-toothed tiger and has to run or fight for his life. His body goes on red alert.

What went on in the bodies of our ancestors hasn't changed at all in us. Our response to any kind of threat is always the same: fight or flight. Of course, there are degrees of response. Your heart doesn't pound as hard from a snide comment as from a mugger threatening you on the street.

The "stress response" actually occurs when we (or our bodies) perceive anything that threatens our well-being. For example, if you don't eat breakfast, you may notice that around 10 a.m. your hands start to turn cold. Well, your body has just noticed that it's starving to death and is starting to call out the troops.

Anything that you or your body perceives as threatening—even upsetting—can produce the stress response. Do you "lose it" in a traffic jam? Some do, some don't. So first you need to understand that stress is dependent upon perception.

Has your client just chewed you out? Your spouse threatened to have your children for breakfast? Or has the boss just come through the office yelling and screaming and headed straight for you, only to go right by you and yell at someone else? Doesn't matter. Your heart starts pounding, your hands turn cold and clammy. You're upset. But as soon as the threat has passed, you put your hand to your heart, take a deep breath, and say, exhaling, "Whew!" You've just gone through a stress cycle.

Once you go into a stress response, blood gets pulled from the extremities (hands and feet) and sent to where it's most needed: the major muscle groups. It also gets pulled from the cognitive parts of the brain (where you think) and is sent to the

HAWAII MEDICAL JOURNAL

Hawaii Medical Journal Readership Survey

Please respond by October 31, 1995

Please mark your response in the appropriate box.

1. ❑ Male ❑ Female
2. ❑ Married ❑ Not married
3. ❑ Under 25
 ❑ 25 to 34
 ❑ 45 to 54
 ❑ 55 to 64
 ❑ 65 or older
4. Education
 ❑ Attended college
 ❑ College Degree
 ❑ Post-Grad
 ❑ Doctorate
 ❑ Post-Doctorate
5. Where do you read The Hawaii Medical Journal, primarily?
 ❑ Home
 ❑ Office
 ❑ Elsewhere
6. How much time do you spend reading each issue?
 ❑ Less than 15 minutes
 ❑ 15 to 29 minutes
 ❑ 30 to 59 minutes
 ❑ 1 hour or more
7. How often do you reference back issues?
 ❑ Never
 ❑ Once per month
 ❑ Twice per month
 ❑ Three or more times per month
8. How often do you refer to the Hawaii Medical Journal?
 ❑ None
 ❑ One
 ❑ Two
 ❑ Three or more
9. How long do you keep a copy of the Hawaii Medical Journal?
 ❑ Less than 1 month
 ❑ 1 or 2 months
 ❑ 3 to 11 months
 ❑ 1 year or more
10. How many other people read each issue?
 ❑ None
 ❑ One
 ❑ 2 or 3
 ❑ 4 or more
11. Number of employees at your office
 ❑ Under 10
 ❑ 10 to 24
 ❑ 25 to 49
 ❑ 50 to 99
 ❑ 100 to 249
 ❑ 250 to 499
12. Does your office provide
 ❑ Dental insurance
 ❑ Disability income
 ❑ Major medical
 ❑ Life insurance
 ❑ Payroll savings
 ❑ Retirement plan
 ❑ None of the above
13. Do you influence any of the following purchases at your office
 ❑ Acquisitions
 ❑ Employee benefit programs
 ❑ Insurance
 ❑ real estate/commercial space
 ❑ Stock/bond purchase
14. What type of home do you own? or rent?

	Own	Rent
House	❑	❑
Townhouse	❑	❑
Condo or apartment	❑	❑
Other	❑	❑

15. What is the value of your primary home?
 ❑ Less than $150,000
 ❑ $150,000 to 299,999
 ❑ $300,000 to 499,999
 ❑ $750,000 to 999,999
 ❑ $1 million to 2.5 million
 ❑ Over $2.5 million

Conducted by The Neilson Network, an independent marketing firm, on behalf of The Hawaii Professional Media Group, 1995.

16. Do you own a second residence?
- ❑ Yes
- ❑ No

17. What is the value of your second home?
- ❑ Less than $150,000
- ❑ $150,000 to 299,999
- ❑ $300,000 to 499,999
- ❑ $500,000 to 749,999
- ❑ $750,000 to 999,999
- ❑ $1 million to 2.5 million
- ❑ Over $2.5 million

18. What is the value of any other real estate investments you may have?
- ❑ Less than $150,000
- ❑ $150,000 to 299,999
- ❑ $300,000 to 499,999
- ❑ $500,000 to 749,999
- ❑ $750,000 to 999,999
- ❑ $1 million to 2.5 million
- ❑ Over $2.5 million

19. Do you have investments in any of the following securities and collectibles?
- ❑ Corporate stock
- ❑ Bonds
- ❑ Money market funds
- ❑ Stocks or mutual funds
- ❑ Bank savings
- ❑ IRA/Keogh account
- ❑ CDs
- ❑ Coins
- ❑ Stamps
- ❑ Gold
- ❑ Silver
- ❑ Antiques

20. What is your household income?
- ❑ Under $50,000
- ❑ $50,000 to 74,999
- ❑ $75,000 to 99,99
- ❑ $100,000 to 149,999
- ❑ $150,000 to 199,999
- ❑ $200,000 to 249,999
- ❑ $500,000 to 999,999
- ❑ $1,000,000 or more

21. Personal income?
- ❑ Under $50,000
- ❑ $50,000 to 74,999
- ❑ $75,000 to 99,99
- ❑ $100,000 to 149,999
- ❑ $150,000 to 199,999
- ❑ $200,000 to 249,999
- ❑ $500,000 to 999,999
- ❑ $1,000,000 or more

22. Do you plan to purchase any of the following during the next 12 months?
- ❑ Cellular/mobile phone
- ❑ VHS
- ❑ 35mm camera
- ❑ CD player
- ❑ Telephone answering machine
- ❑ Stereo components
- ❑ Computer equipment
- ❑ Fax/modem
- ❑ New car ❑ Buy ❑ Lease

23. How many flights to the Neighbor Islands have you take in the last 12 months?
- ❑ None
- ❑ One to five
- ❑ Six or more

24. How many flights to the mainland have you taken in the last 12 months?
- ❑ None
- ❑ One to five
- ❑ Six or more

25. How many international flights have you taken in the last 12 months?
- ❑ None
- ❑ One to five
- ❑ Six or more

26. Do you use a travel agent?
- ❑ Always
- ❑ Frequently
- ❑ Occasionally
- ❑ Never

27. How often have you stayed at a hotel in the last 12 months?
- ❑ Never
- ❑ One to five times
- ❑ Six or more times

28. How many cars in your household are leased?
- ❑ One
- ❑ Two
- ❑ Three or more
- ❑ None

29. How many cars in your household are owned?
- ❑ One
- ❑ Two
- ❑ Three or more
- ❑ None

30. Which of the following cultural or sports activities do you engage in?
- ❑ Art/Museums
- ❑ Concerts/Theater
- ❑ Gourmet cooking
- ❑ Photography
- ❑ Television
- ❑ Health club/spa
- ❑ Bicycling
- ❑ Jogging/walking
- ❑ Boating/sailing
- ❑ Other water sports
- ❑ Golf
- ❑ Fishing/hunting
- ❑ Tennis
- ❑ Snow skiing

31. Do you subscribe to or buy any of these publications regularly?
- ❑ Hawaii Business
- ❑ Honolulu Advertiser
- ❑ Honolulu Star-Bulletin
- ❑ Barron's
- ❑ Dun & Bradstreet
- ❑ Forbes
- ❑ Harvard Business Review
- ❑ Money
- ❑ Newsweek
- ❑ Time
- ❑ US News & World Report
- ❑ Hawaii Invester
- ❑ Honolulu Magazine
- ❑ Pacific Business News
- ❑ Business Week
- ❑ Entrepreneur
- ❑ Fortune
- ❑ Inc.
- ❑ Nation's Business
- ❑ Success
- ❑ USA Today
- ❑ Wall Street Journal

32. In the past 30 days, where have you dined outside the home?

Fast food:
- ❑ Never
- ❑ Once or twice
- ❑ Three to five times
- ❑ Six to 10 times
- ❑ Eleven to 15
- ❑ 16 or more

Family-style dining:
- ❑ Never
- ❑ Once or twice
- ❑ Three to five times
- ❑ Six to 10 times
- ❑ Eleven to 15
- ❑ 16 or more

Fine dining:
- ❑ Never
- ❑ Once or twice
- ❑ Three to five times
- ❑ Six or more times

Business breakfasts:
- ❑ Never
- ❑ Once or twice
- ❑ Three to five times
- ❑ Six or more times

≈

Mahalo! Please fold with the address block out and mail by October 31, 1995.

HAWAII MEDICAL JOURNAL

Hawaii Medical Journal Readership Survey

Please respond by October 31, 1995

The purpose of this survey is to establish updated demographics for the publications of the Hawaii Professional Media Group. The last statistics were compiled in 1993, and we need current data to market the journals effectively. Advertising in the HDJ supports this important communications voice of the association—please help by responding ASAP, and encourage your colleagues to participate also.

Please indicate your interest in the following questions regarding the Hawaii Medical Journal.

REGULAR MONTHLY COLUMNS

	CONTINUE	LESS FREQUENT	DISCONTINUE
HMA Alliance			
Medical School Hotline			
Military Medicine			
Historical Notes			
Medicine, Law & Bioethics			
Book Reviews			
News & Notes			
The Weather Vane			

SPECIAL ISSUES

Suggested frequency

- ☐ 1 time a year
- ☐ 2 times a year
- ☐ 4 times a year
- ☐ other _____

Suggested topics for future special issues?

Suggestions for increasing HMA membership?

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SAFE Fun in the Sun

Hawaii's place in the sun—with so much of it!—makes us more vulnerable than most of our counterparts on the mainland. Dr. Norman Goldstein, Honolulu dermatologist and proponent of safe sunning, wants to see that change. And it can, with the proper precautions and common sense to follow general guidelines that will make your outdoor time safe and healthy.

Exercise, diet and relieving stress are basic elements in developing a lifestyle that is both well and fit. Being outdoors and enjoying the varied activities that are available to us year-round are taken for granted and are the envy of many—witness the thousands of tourists who descend on our shore annually. Professionals—office-bound, movement restricted, prone to stress factors—seem to be no more aware of danger than anyone else in the general public. And even among health care providers, little attention is paid to the facts and figures regarding skin cancers and other sun-related disorders.

The annual incidence of malignant melanoma, the most deadly form of skin cancer, is increasing at a faster rate than any other cancer. It has increased by 1200 percent since the 1930s, and from 1980 to 1990, at approximately seven percent a year. One in six Americans will develop skin cancer during his or her lifetime. And one in every three cancers diagnosed is a skin cancer.

Malignant melanoma is the most frequent cancer in women in the United States aged 25-29 and the second most frequent (after breast cancer) for women aged 30-34. Nonmelanoma skin cancers (basal cell and squamous cell carcinoma) are responsible for 2,000 deaths annually, with an overall five-year survival rate for patients of 95 percent.

In 1990, the lifetime risk of an individual in the U.S. developing a malignant melanoma was 1 in 105. In 1980, the same risk factor was 1 in 250; it is projected to be 1 in 75 by the year 2000. For each decade since the 1940s, melanoma survival rates have improved by approximately ten percent. Statistics show that early diagnosis and prompt excision of melanoma lesions when they are thin leads to cure in virtually all patients.

Guidelines set by The Skin Cancer Foundation, Hawaii Chapter, include: wearing protective clothing and cover the skin, wearing broad-brimmed hats and sunglasses that filter out ultraviolet rays, and before going outdoors, use sunscreens of SPF 15 or higher always-always-always! Also, avoid repeated over-exposure to the sun, especially between 10:00 a.m. and 3:00 p.m.

Some substances increase the harmful effect of ultraviolet radiation, including some industrial chemicals and medications, and UV rays bounce off and intensify around water, sand, concrete, light-colored surfaces and snow.

Treating sunburn, sunstroke and skin cancer as a result of neglecting common-sense protective measures is definitely ill-advised and unnecessary. Practice "safe sun" and enjoy the natural wonders of our beautiful state, all in good health.

more primitive parts of the brain where your senses are controlled. You can hear and see better, but you can't think as well.

Adrenaline is released, which, when it hits your liver, causes it to release sugar into your blood stream (not good if you're diabetic). When the adrenaline hits your lungs, your lungs open up allowing you to take in more air. But first they close down slightly to increase air pressure (not good if you have asthma). Your heart rate increases and your blood pressure goes up, helping blood to flow to critical areas more quickly (not good if you have high blood pressure). Extra platelets are released into the blood to help stop bleeding (not good if you have partial blockage of your arteries). Blood is taken from the digestive system and pumped elsewhere (not good if you've just eaten or have digestive problems). Energy that is normally used to power your immune system is transferred elsewhere, your resistance is lowered, so you're more likely to catch a cold or the flu.

To summarize, if you live with a great deal of stress you're more apt to make snap decisions based on perceived threats rather than reasoned judgment. Your digestion won't be working so well. You'll be tired because all your energy is being used up. You'll be snappy and short-tempered. Your hands and feet will be cool, sometimes cold. Your blood pressure will be elevated and you'll be prone to whatever illness is going around the office.

In short, you need to break the stress cycle.

Relax.

There's a way to do it.*

*Art Pryor has developed stress management products for a well-known pharmaceutical company. He now runs a very upscale bed and breakfast inn in Wailea (Golf Country) Maui called Jasmine House, *where he conducts regular stress management programs to break the stress cycle and re-energize his guests. For more information, call Art at 808-875-0400.*

Exercise: Soothe, Shape & Strengthen

What more could you ask from an exercise program that tones and strengthens forgotten muscles, soothes you with music, relieves stress through breathing and non-impact movements and makes you feel *real good* at the end of a session?

If this appeals to you, callanetics may be your answer. Not as well-known as aerobics and machine-based programs, the exercises were developed by Callan Pickney, whose congenital back problems were aggravated by years of backpacking. Drawing on her ballet training, she concentrated on strengthening the muscles that support the spine, which protecting the back from further injury. It integrates some ballet and yoga positions, long stretches and bar exercises with constant repetitive contractions, very small pulsing motions at 1/16 to 1/4 of an inch. Not to be put off by the ballet reference—this is not a dance class! Several trips to the "barre" will convince you this is not a wimpy program—many men really benefit from this activity.

Because it is non-impact and controlled, there is less danger of shin splints or pressure on the knees or back. Callanetics is beneficial to men and women, young or old, athlete or couch potato—although the sessions definitely work you over, the element of stress is greatly reduced and shaping and toning often result after several weeks.

Especially good for occupations where the same positions are held for long periods (such as dentists, technicians, office staff, etc.), callanetics develops greater flexibility, limberness and builds strength rapidly. It also promotes more stamina as your body learns to relax into the movements, and as you are repeatedly reminded—breathe! It's pretty amazing what a really deep breath and release will do in the middle of a tedious job.

Relieving stress is not just a by-product of callanetics. Says LuAnn Gordon, franchisee and instructor of classes in Kakaako and Kailua, "Some students come in very deconditioned because they haven't exercised for years. You're encouraged to exercise at your own pace, and you'll see and feel a difference after just a few classes. As muscles start to tighten and tone, you'll also be able to increase the number and intensity of the contractions. I really believe this is the exercise of the '90s. It's not intimidating and nobody competes, except with oneself."

Callanetics classes are offered selected daytime, after work and evening hours. Call 523-2958 for more information.

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Table 9.—Physicians' Annual Earnings by Sex, Years in Practice, Type of Practice and Fee for Service versus Salary

	Total	Men	Women	≤10 yrs in prac	≥ 10yrs in prac	Primary care	Specialty	Fee for service	Salary
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
$ 125,000 or less	33	30	47	45	24	67	18	25	41
125,001-175,000	27	28	20	18	33	15	32	33	20
More than 175,000	40	42	33	37	43	18	49	41	39
Median income (thousands)	$157	$160	$133	$139	$164	$111	$174	$162	$147
sample	92	77	15	38	54	27	65	51	41

Note: Respondents who declined to name their income have been excluded from the table

There were more specialists responding to this survey than primary care physicians; 70% of all respondents were specialists.

A 54% majority receives compensation on a fee-for-service basis. Among the 46% who are salaried, most work for Kaiser Permanente.

The median annual earnings of Hawaii physicians is $157,000 (1994 before-tax income from the practice of medicine). That level of income places Hawaii doctors at parity with their Mainland counterparts. According to a study conducted in 1993,[7] median annual earnings for medical doctors nationally was $156,000.

Eighty-one percent of respondents were men; 19% were women.

Income Versus Demographics

Table 9 shows the figures physicians reported as their 1994 earnings from the practice of medicine, cross tabulated by other demographic characteristics such as their sex, their years in practice, etc.

The table shows that the highest earners are men, those in practice for more than 10 years, specialists, and the physicians who work on a fee-for-service basis.

The male/female disparity is likely due to two factors: the small number of women doctors in the survey—which makes that data less reliable—and that it is probable that fewer women have been in practice for a lengthy period, since longevity is linked with higher earnings. (Annual median income for women doctors was $133,000; for men it was $160,000.)

The factor most related to annual earnings, according to these study results, is whether the physician is in primary care or in a specialty. Primary care doctors' median income is $111,000 annually while specialists enjoy a median of $174,000 a year.

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After Five Decades, Can Health Care Costs Be Controlled Without Sacrificing Quality?

Paul Y. Tamura MD

As the war in Europe was winding down in the mid 1940s, while still in medical school, I remember being told by one of our professors, Dr J. Robert Willson, that we would be seeing national health insurance in America within "the lifetime of our practice of medicine." Was it prophesy based on *crystal-ball gazing*? Actually, he had just returned from a conference in Washington, DC where federal involvement in health care was discussed, and he was obviously impressed.

By that time, Great Britain was well on the way toward establishing National Health Service (NHS).[1-4] The initial NHS proposal was brief and very broad. It was referred to as *The White Paper* and was only 85 pages long. The White Paper was originally written to be "attractive, lucid...free from verbal ambiguity..." and, of course, free of controversy. This can be accomplished only by omitting details relating to such items as organization, health centers, hospital and special services, staffing, distribution of doctors, and home care, to name a few.

Briefly, the White Paper started with four major proposals,[3] which hardly sounded like socialized medicine.

1. Freedom to use or not use facilities; no compulsion into service either for patient or doctor.
2. Freedom for people to choose their own medical advisers.
3. Freedom for doctors to pursue their professional methods in their own individual way.
4. The personal doctor-patient relationship was to be preserved and the whole service founded on the concept of the *family doctor.*

In charge would be the Minister of Health, responsible directly to the Parliament. Available to him or her would be two statutory Central Health Service Councils (one for Scotland and one for Great Britain proper) made up of doctors, nurses, dentists, and pharmacists. The latter entity had no executive powers and its duty was to render advice on technical and professional aspects, reporting only to the Minister of Health.

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Honolulu, HI 96826
(808) 951-6422

Very shortly and as expected, deviation from earlier stated principles occurred in all areas. The bureaucracy expanded relentlessly. The Central Medical Council, started as two, became six in a matter of weeks. At every level administrative bodies were established. The freely elected Central Medical Boards became more and more appointed. Proposals for hospitals expanded to 40 proposals. There was a plethora of confusing statements like "NHS is not a matter of poverty and wealth," that "it was not for charity." "Everyone would pay for a service for everyone by taxation" in part through Social Security Insurance contributions, but "there would be no charge for the services." One member of the House of Lords said the governmental intentions were honorable, but "good intentions were not good enough," and that the White Paper was written "without sufficient knowledge."[4] Another member of the House indicated that "the establishment of a medical inspectorate...[was]...not very dissimilar from a medical Gestapo."[4] Nevertheless, NHS came into being with federalization of hospitals, doctors, dentists, nurses, others, etc, in early summer of 1948. Thus, from the beginning, the primary decision for socialized medicine was made and any *salesmanship* was for the purpose of obtaining cooperation, primarily from physicians and the British Medical Association. Doctors, of course, had no choice as to their participation, although at one point a threat to boycott was made by doctors.[5]

In the United States, President Clinton is not the first president to propose a national health care plan. There were proposals in the early 1930s, followed periodically by proposals in the mid 40s, mid 60s, early 70s, late 80s[6] and now, recently, 1994. President Roosevelt in 1945, in his annual message on the State of the Union, declared, "adequate medical care" to be one of the "basic human rights." The battle cry of the extremists was that national health insurance is "socialism and communism worthy of inciting to revolution."[7] Ten months later, in a special message to Congress, President Truman recommended that this *right* be made effective through National Health Insurance and related measures.[7] It was the first time in American history that a full-length presidential message dealt solely with health care. The reactions of Americans were mixed. Some spoke of it as a "milestone in health care progress." Others were in disbelief that Truman would propose *socialized medicine*. Characteristic over the decades will be the pattern of what occurred thereafter. Congress followed up in 1947 with two proposals. One entitled National Health Insurance and Public Health Act of 1947 (Senate Bill 1320) introduced by Democrat Senators Wagner, Murray, Pepper, Chavez, Taylor and McGraff.[8] The other, at the same time, is the National Health Act of 1947 (Senate Bill 545)

introduced by the Republican Senators Taft, Ball, and Donald.[9-10] The primary difference regarding NHI is always whether the government does or does not have the right to exercise any supervision or control over the administration of health care, personnel, maintenance, or operation of the state plans developed. Neither measure passed (congressional *gridlock*?). However, a multitude of health care proposals continued to be introduced over the years contributing to changes in the practice of medicine. It is difficult to name all the proposals, much less in chronological order. Many fell by the wayside before or shortly after introduction; others took years to implement or were subsequently modified. However, the following is an attempt to demonstrate the influence of the federal government on the practice of medicine.

The need for more hospital beds throughout the country was recognized. In the 40s, indigent people were taken care of primarily by state and city hospitals. There were about a million government beds while the private or voluntary beds numbered close to 400,000. To deal with this situation, the Hill-Burton Bill was proposed and passed. For construction of hospitals, federal funding on a matching basis became available to states. The change in the need for private hospitals came about because Blue Cross, started in the mid 30s, became established a decade later.[7,9] This enabled many people, previously considered *indigents,* to go to private hospitals. The Philadelphia General Hospital, a 2,500-bed city hospital, experienced a drop in acute care patients noticeably by the late 40s. Within the next three decades the previously *unthinkable* happened, the famous hospital closed.

The motivation for governmental concern has been the unmitigated rising cost of medicine.[11-18,21-26] The medical literature is replete with this issue into the 70s and 80s with such adjectives as *spiraling, fantastic, soaring, astronomical, and uncontrolled.* The doctors, hospitals, labor, and pharmacists were blamed. In the 50s, health care workers were getting very low wages and began to demand higher wages. In Hawaii, the workers were seeking wage parity with California, which was 2 to 4 times higher. Nationwide, labor stated unequivocally that they would not relent on the issues of wages. Meanwhile, the physicians' fees were very low at that time, $5 to $10 a visit, and had to increase. The cost of drugs started to rise. There seemed to be an explosion of technology in various areas of medicine providing new services, many not inexpensive. Advances in instrumentation, equipment, and specialized technical services were expensive. In Hawaii, hospital-bed rates and associated service charges meanwhile had risen three times faster than wages.[17]

In 1966, Medicare and Medicaid were passed. For many of the hospitals, this was to be the beginning of about 15 years of financial difficulties with rising costs on one hand and increasing governmental restrictions on reimbursement on the other.[18-23,25,27-30,36-43] The government started with a proposal that hospital administrators make some effort to control costs internally. A range of measures were addressed such as waste management, energy management, preventive maintenance, food service, efficiencies in operation, and use of generic drugs rather than proprietary drugs, to name a few. Then came *cost containment.*[18-19] One of the early regulations was reimbursement based on "cost or charges, whichever was higher." A nursing home in Hawaii eliminated central air conditioning and substituted individual room air conditioners with increased cost. Needless to say, this particular regulation was not widely publicized and lasted a very short time. Other proposals continued and prospective reimbursement guidelines covered even wider areas such as physical therapy, rural hospitals, respiratory treatment, etc. As part of *All-inclusive rate* reimbursement (a precursor of DRG), diseases were separated into three general categories: medical, surgical, and obstetrics. Criteria were established for length of stay for different diseases. Utilization review became an important function in hospitals with attention to documentation in medical records by attending physicians. Notes in charts on treatment and patient progress were scrutinized by insurance clerks to justify every day of hospitalization. Based on this, at times, there was *retroactive denial* of payment for *excessive days* of hospitalization. To appeal for payments for those days, lengthy medical explanation needed to be submitted. This appears to fit in with the attitude, "If voluntary effort fails, cost controls will follow."[25] By the early 80s, a number of hospital closures had occurred.[30]

When disease-related group (DRG) reimbursement was proposed by Medicare in September of 1983 under the Reagan administration, there was to be fixed payment for each illness.[27-30] Since about 40% of the hospitals' total revenue was Medicare, the fear of bankruptcy was still foremost in the minds of the hospital administrators (facetiously, "Da Revenue's Gone").[30] Under considerable pressure, the hospitals undertook various measures to avoid bankruptcy.[30] They laid off workers and stopped hiring. Then some hospitals, with advice from consulting firms, *improved* the coding to maximize Medicare reimbursement. Patients recently discharged to decrease utilization were *readmitted with a different diagnosis.* When the government discovered these measures, the hospitals and doctors were accused of collusion. Sanctions were instituted if there were any evidence of a second DRG, eg, abnormal laboratory studies detected in the first admission, payments for the second admission were denied. There were instances where physicians were deemed to be responsible for the charges unless they had notified the patients properly, in writing, in advance. The hospital diversified into rehabilitation, long-term care, and home care for those patients who needed continued care beyond the allowable limits.[30] Home care went from 15% in 1983 to 35% in 1990. Some hospitals even went into unrelated areas including travel, health clubs, and collection agencies, to name a few. (They also got into tax problems.) The hospitals also attempted to set up more complex, higher-paying conditions as, for example, open heart surgery. These services increased from 10.5% in 1983 to 15.2% in 1991. The outpatient workload increased about 27% in 1991. The percentage of hospital revenue from outpatient department increased from 13.4% in 1983 to 25% in 1992. Thus, instead of falling, revenues and profits increased from 1985.

In 1956, the Relative Value System was being developed by various specialties in an effort to establish a logical, uniform method of determining fees. The Federal Trade Commission, in the mid 70s, had the antitrust section of the Justice Department look into RVS.[31-32] Needless to say, the physicians dropped RVS. From time to time, FTC continues to look into areas where fees are being established.

Meanwhile, what is the status of Resource-Based Relative Value Scale system passed by Congress in 1992?[33-35] RBRVS has a five-year phase-in period started in January of 1992. During this time, there are adjustments in fees with an increase of about 15% for those services that are underpriced, and during the same period, those fees that are higher will be reversed. RBRVS is complex with a number of factors brought into the establishment of fees, including volume, geographic variation,

specialty differentials, and peer review. Of course, self-referral will be disallowed.

In the mid 70s when managed care was first proposed, it looked like NHI was *just around the corner*.[6,44-45] Carter derailed efforts toward NHI because he did not believe continuing rising costs could be controlled through NHI. He was right. Costs still have not come down, even with all the regulatory measures that have been put in effect through the years. At that time, managed care was "on the fringe of health care system." Today, it is very much *the system*. It is estimated that "three-quarters of the private practice physicians participate in at least one HMO, PPO or IPA contract...derive an average of about one-third of their revenue from managed care..."[36] It consists primarily of two components: the purchasers and the providers.[36-41] The former includes businesses, insurances, government, and any entity seeking medical service. The latter are the providers, mainly the hospitals and doctors. The purpose is, "best care at the most reasonable or lowest cost." The providers are involved in "financial risk sharing" through capitation. There is implication of *rationing*. Is there going to be "deliberate withholding of potentially beneficial care?"[46] To say that some form of rationing does not occur in the United States now is naive. In a recent article, the distinction between the term *implicit* rather than *explicit* is made. "Implicit rationing can be carried out in a variety of ways: by budget, as when capitated health plans limit certain services; by price, when services such as cosmetic surgery are not covered by health insurance; by queue, when certain services are not immediately available; by hassle, when administrative barriers facing physicians and patients deter the delivery of services; by insurance coverage; and by subtle social factors."[46]

Ultimately, from the standpoint of patients, the change likely to occur is mainly the quality of service for two groups of patients:

- Individuals with common, ordinary *aches and pains*, especially the conditions considered to be non-life threatening, or *chronic*. In Great Britain, the waiting period for care of these diseases in the different districts ranged from 2 1/2 to 4 years depending on the district. The suffering is difficult to measure.
- Those (generally the elderly) afflicted with advanced disease, cancer, stroke, Alzheimer's disease, or chronic pulmonary disease to name a few, for which cure is extremely remote at best. Will the cost factor alter or even deny treatment of these patients?

From the standpoint of physicians, will it be necessary to have *gatekeepers* and *hatchet men*? Will insurance companies or hospitals remove medical staff who do not comply? Apparently, this has occurred recently in Hartford, Connecticut, where a lawsuit was filed by patients and doctors against an insurance company.[43] AMA has proposed the Patient Protection Act to assure fairness and accountability in the way insurance companies operate many of these plans.[36] Are the patients and doctors only *pawns* in this endeavor? Will the relationship between the patients and the doctors become one of estrangement? Who protects the doctors, controlled economically, without the freedom to practice medicine as they believe; yet, saddled with responsibility and accountability for *following orders*. Who protects him or her from *the attorneys in the alcove*?

At the moment, it appears that managed care will keep the federal government at bay, or limited to the uninsured segment of the population. If the private sector, businesses, insurance companies, and hospitals can take care of health care at a profit, why would the federal government want to be involved with the kinds of costs involved in national health insurance? The irony is that all through the years, we were worried about federalization of health care.

I have always considered the expression of medical philosophy to be caring and beautiful: Cure sometimes, help often, comfort always. Why does it now sound so discordant? Is it time for physicians to pause and reevaluate the situation?

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Council Highlights

September 15, 1995
Roger T. Kimura MD, Secretary

The HMA Council was called to order by HMA President Frederick C. Holschuh at 5:36 pm.

Those present were C. Lehman, President-elect; R. Kimura, Secretary; J. Spangler, Treasurer; AMA Delegates: C. Kam, R. Stodd; AMA Alternate Delegate: A. Kunimoto; Speaker: L. Howard; Vice Speaker: H.K.W. Chinn; County Society Presidents: D. Canete, Honolulu; M. Joshi, Maui; T. Crane, Kauai; T. Smith, W. Hawaii; Councilors: T. Au, P. Chinn, P. DeMare, R. Hollison, S. Hundahl, B. Robinson, M. Shirasu, K. Thorburn, J. Betwee, B. Shitamoto, P. Kim, C. Kadooka, A. Bairos; Past Presidents: W. Chang, W. Dang, G. Goto, S. Wallach, N. Winn.

HMA staff: J. Asato, J. Estioko, N. Jones, P. Kawamoto, B. Kendro, L. Tong, J. Won, and A. Rogness, recording secretary.

• On behalf of the Council, Dr Carl Lehman thanked Dr Holschuh for his hard work as President 1994-95. He did a great job in all the public appearances, and he speaks very well for the HMA and doctors in practice. Dr Thorburn presented Dr Holschuh with a lei and Council applauded.

• Dr Holschuh reported that Dr Kimura, Mr Won, and he attended the Kauai County Medical Society meeting. He thanked Dr T. Crane and Kauai County for their hospitality. He will continue on the Blue Ribbon Committee involved with the Long-term Care Reform Task Force, a private venture. He has been appointed to a committee to evaluate the function of SHPDA and CON. The committee will report to the legislature. Keith Kamita, head of the state narcotics office, says physicians who are uncomfortable about prescribing a drug or any situation involving a prescription can call his office for advice. Kamita will write an article for the *HMA Newsletter*. The Hawaii Health Council has been created and met once; the HMA president serves on this Council. The VISION 2000 meeting was a great success. HMA staff did a tremendous job; and special thanks are in order for Dr D. Canete who authored the concept.

For Action

• It was moved and carried that the 1996 budget recommendation to the House of Delegates be referred by Council to the HMA Finance Committee for restudy and reevaluation. It will be presented to the House of Delegates in view of the concerns of revenue and expenses. Mr Won will prepare job descriptions and salary ranges for staff.

• Dr Sharon Vitousek has been appointed the medical assessment medical director of Hawaii Health Information Council. It was moved and passed that Dr William Dang, Jr, be nominated to replace her as chair.

County Society Reports

Honolulu.—Dr Canete distributed the plans for a new HMA operating structure in which counties would become districts. It was suggested that the idea for the new structure be forwarded to the physicians in the Leeward and Windward areas of Oahu to see if there is interest in joining. There is a resolution No. 3 for the annual meeting on the restructuring of HMA. The HCMS might submit a substitute resolution to No. 3. The HCMS is investigating the option of phone fax; one message can be sent by phone fax to 1500 physicians and save postage.

Hawaii.—Dr Kadooka reported that the East and West Hawaii County Medical Societies had a meeting on August 29 on managed care issues.

Kauai.—Dr Crane reported that in July Dr Holschuh, Dr Kimura, and Mr Won attended their county meeting. It was well attended. Kauai County had a rapid increase of 20% in membership (18 members) following that meeting.

Maui.—Dr Joshi reported that the July meeting was sponsored by Parke-Davis with Dr David M. Treiman, professor in residence, department of neurology, UCLA School of Medicine, spoke on "The New Anti-epileptic Drugs." Two new members joined: Drs William Franks and John Thompson.

West Hawaii.—Dr Smith reported that their county will be meeting shortly before the HMA annual meeting to wrap-up the year. Dr Bairos reported that a seminar on palliative care is being developed.

For Information

Tobacco Task Force.—The Department of Health, Health Promotion and Education Branch, Tobacco Prevention and Education Project will fund the printing of a posterboard and stickers that will say "Warning: This magazine contains cigarette advertisements." HMA will provide a booth, if available, at the annual meeting, will publicize the availability of the stickers and poster boards in the *Journal/Newsletter/Bulletin*, and will distribute them to all physicians. HMA will have some stickers and poster-boards available at the office for physician members.

Hawaii PRO.—At the last Council meeting, it was approved that the Executive Committee pursue the PRO. The request for proposal is not out yet. HMA currently is looking at various options and would prefer a group who like us believes quality assurance belongs to physicians. It is anticipated the actual PRO will start in October 1996.

CVS.—Mr Won reported the HMA is looking at several options for a credential verification service. CIVS of Baltimore will come to HMA to demonstrate a complete system from beginning to end. HMA will then decide if it will do the CVS or hire CIVS.

The AMA has come out with a physician profile of MDs and DOs. If HMA uses the AMA and asks for more than 100 names at a time per search it will cost $4. There will be other costs involved.

The meeting adjourned at 8:45 pm.


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News and Notes

Henry N. Yokoyama MD

Life in These Parts

Hawaiian Rental All Signs

"Drive with care—Life has no spare."

"A philosopher has problems for every answer."

Intriguing sign: "Comming Soon–Lee's Hair Styling," corner of Waialae and St Louis Heights Road.

License Plates

ANAHOU on a white BMW sedan.

MONKEY on a green foreign sedan.

Roger, Fat Sucker, Out

(*MidWeek*, August 2)

Barry Miller, 52, AKA Fat Sucker with 10 years and 7,000 successful liposuction procedures under his belt, flies F-15s as a flight surgeon for the Hawaii Air National Guard. Fat Sucker is his call name in the Air Guard and his license plates read DR LIPO. Barry saw his first liposuction in the early 80s when dermatologist Claude Caver, who had gone to France to learn the procedure, asked him to assist. When Claude broke his wrist, he would do one side and Barry the other. After 15 years as a Straub ER physician, Barry has specialized exclusively in liposuction. He has designed original liposuction instruments used worldwide and has developed the Miller technique of advanced lipo-sculpture.

Heihei O Halawa Ekolu

(A large foot race on Halawa)

When the 10-mile H-3 freeway is completed in the spring of 1997, the organizers of the 10-mile run, the State Department of Transportation and **Jack Scaff**'s Asian-Pacific Medical Marathoners Association, expect to draw 62,000 runners. The run will start in Kaneohe and end at Aloha Stadium.

A Heartwarming Event

Back in June, longtime Hilo ophthalmologist **John Zelko**, 75, wrote a prescription for Fastin, a diet pill, for his patient. Consequently John and his patient, a Council Member's wife, were arrested. Then a heartwarming thing happened—35 Hilo physicians took out a quarter-page newspaper ad in support of John. They pointed out that John was *an outstanding physician of impeccable character and spotless reputation who has served his community with care and devotion for generations.*

KHVH News Item

In the OR, a Sloan Kettering neurosurgeon studied the cranial x-rays of his patient and operated forthwith, but alas, on the wrong side. His judgment was correct, but someone had inadvertently put up the films of another patient with a similar lesion on the opposite side.

Larry Wong Recalls

Larry's first OB patient 35 years ago was a primip with a breach presentation. A consultant reassured him that everything was in order and he should be patient. After fidgeting for more than seven hours, Larry discovered the patient had a double vagina and the baby's legs presented in each orifice. Larry simply snipped the thinned restricting septum and whosh! A perfectly healthy baby delivered.

A "Magnum PI" Ferrari For Sale

Kailua physician **Robert Simich**, who is considering retirement, has a fiery red Ferrari 308 Spyder for sale for $45,000. Bob purchased the car in 1988 after "Magnum PI" ended. The car is one of 15 Ferraris donated to the TV series by Ferrari North America and had only 2,080 miles when Bob bought it. Bob admits at age 67, "I'm getting too old to crawl in and out of it." Back then, he had needed a *muscle car* and it was a good deal.

Rotorooter Atherectomy

By the end of July, Hawaii cardiologists **Ed Shen**, **Derek Pang**, and **Ray Itagaki** had successfully used the *Rotoblator* on 20 patients. The patients selected were more complicated, higher risk cases, some with previous bypass surgery or balloon angioplasty. *Primary Cardiology* reports a 94% to 97% success rate with rotational atherotomy. The Rotoblator does differential cutting by grinding plaque material at 180,000 to 190,000 revolutions per minute. The procedure requires lots of patience and two cardiologists must be present, but it takes one-third the time for CABG and has a shorter recovery period. Straub's **Roy Chen** has recently completed the special training and several other Hawaii cardiologists are waiting to take the selective training course.

Myron Shirasu's Witticism

Myron says he stopped at three children because back in the 70s the world birth statistics said, "One out of four births is Chinese." (No offense to our Chinese colleagues.—HNY)

Physician Moves

Internist-endocrinologist **Michael Bornemann**, FACP, opened his office at Queen's POB 11, Suite 304.

David Miyauchi opened his general practice office at AY Bldg, 1507 S King, Suite 407.

Allergist **Allan Young** retired. **Stephen Naruto** closed his clinical practice at 99-128 Aiea Hts Dr, Rm 501. **James Miller** assumed his practice. **Beth Ary** MD, FACOG, (Fellowship in reproductive endocrinology and uro-gynecology) opened her office at Queen's POB II, Ste 402. OB/Gyn **Dottie Watson** opened a second office at St Francis Medical Plaza West POB, Ste 108.

Elected, Appointed and Honored

Kuakini Med Center elected **Tad Iwanuma** Chief of Staff, **Stuart Sugihara** Assistant Chief of Staff, and **Mark Kuge** Secretary. At large members are **Thomas Au, Owen Kaneshiro, William Morioka,** and **Robert Oishi**.

Waianae diet developer **Terry Shintani** was named one of six nutritional visionaries by *Eating Well Magazine*.

National News

Violence

AMA President **Robert McAfee** says violence is our No 1 public health issue, and makes enormous demands on the nation's resources and health care dollars. His report categorizes violence as: Family violence, sexual assault, public violence, and virtual violence, as depicted in entertainment media.

Charitable Medical Care Up in 1994

Two-thirds of American physicians provided $11.3 billion in free or reduced-fee care in 1994 and another $9.8 billion in doctor bills that went unpaid. The AMA survey learned that more than 300,000 physicians spent one of every 10 hours working without fees and devoted seven hours a week to charity or reduced-fee care. Surgeons and radiologists were more likely to provide charity care and pediatricians and pathologists are least likely. Rural physicians are more likely than urban physicians.

Vigorous Exercise

Many exercise advocates including the Centers for Disease Control have been pushing moderate exercise for longevity, but **I-Min Lee**, assistant professor of medicine at Harvard and lead author of a 26-year study of 17,321 healthy Harvard alumni men, finds that only vigorous exercise is associated with a 25% lower mortality. Moderate exercise did not reduce mortality rates, but did improve quality of life, promote physical well-being, and regulate blood pressure and overt diabetes. (Well, you can't have everything.—HNY)

Sportsmen

Tennis Anyone?

"Dr Fitness" **Chet Nierenberg** says, "The No 1 exercise I recommend for tennis players in the off-season is bicycling. You can do it even with shin splints. Bicycling has the advantage of using the muscles in a very quick or fast twitch mode. Tennis is a game of quick stops and starts that requires the fast rather than slow twitch muscle fibers. I recommend the stationary bicycle as opposed to a moving bicycle because it is easier to control the pedal speed and resistance. The secret to training for tennis is using a high RPM or pedal speed with a light to medium resistance. Tennis players will want to get around 100 or even 120 revolutions per minute.

The Presidency

(*Time*, Aug 28 by James Carney, Washington)

In Golf We Trust (Excerpts therefrom)

Continued on Next Page ➤

Classified Notices

To place a classified notice:
HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
Nonmembers.— Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Position Available

BC/BE family practitioner for multispecialty group. Lahaina, Maui; no OB, hospital work optional. Relocation expenses, early partnership available. Well-established practice, beautiful location. Position available summer 1996. Send CV to: D. Gilbert MD, 130 Prison St, Lahaina, HI 96761.

Locum Tenens

Radiologist.—Available on short notice for locum tenens. Full or part time, any island. (808) 875-9794.

Office Space

Sports medicine and orthopedic surgical practice.—Willing to share office space at Queen's POB 1 and Pali Momi POB. Complete staff, managerial system, radiology, and physical therapy svcs available. Call Diane Fong, 536-4992, M-W-F or 487-7231 T-Th.
Nuuanu offices for lease.—Central location, good parking, 674 square feet and 469 square feet. Call Didi (808) 537-3537.
Physician Space for share.—Queen's POB II has space available to interested parties. Suitable to needs. Ideal for flexible hours, evenings, or weekends, negotiable. Call Carol, at (808) 522-9633
Office space available.—at Queen's POB I for surgical subspecialty. No buy in. Please call Benjamin Chu, (808) 524-1551. Available Dec 1995.

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News & Notes

Continued from Page 750

"Clinton is skilled with a driver and loves nothing more than to put his weight into his swing and blast a ball 250 yards off the tee. His weakness is his short game and a tendency to 'chili dip'—mishit the ball on chip shots so that it dribbles just a few yards."

Fore, Score and Closing 80

There's purpose to Clinton's intensity. As he tells just about anyone who will listen, which is pretty much everyone since he is the President, one of his goals in life is to score below 80 on the links before he turns 50.

Medical Tidbits

A USC School of Medicine study of 156 men S/P CABG aged 40 to 50 given 100 IU of Vitamin E daily showed "significantly less coronary artery lesion progression" than men given lesser amounts of Vitamin E.

Baby Talk

As a new mother, I delight in each stage of my son's development. The day he stretched his little arms up to me and said, "Mommy" for the first time, I almost burst with pride. Minutes later, however, our Labrador retriever, Max, sauntered into the room. My son toddled toward him and called out, "Mommy!"
(Contributed by Katherine Bandujo, *Readers Digest*, June 1995)

The Weathervane

Russell T. Stodd MD

This Must be the Place

Slowly, but perceptibly, the one true cost saving type of health insurance is gaining ground. Statutes to allow employees to open IRA-like tax exempt medical savings accounts for routine care have been established in 15 states. Moreover, 23 additional states are considering enactment of such laws. Such health insurance is less expensive, allows patients to select their physicians, provides umbrella catastrophic protection, and permits the medical insurance deposits to be tax deductible.

Dr Kessler Keeps Threatening to be Useful, but Rarely Makes it

At last, legislators are looking at the Food and Drug Administration approval process. Because it takes much longer and is five times as expensive to get medical-device approval in the United States than it does in Europe, manufacturers are shifting operations overseas. In addition, the absurd product liability laws in America have caused 73% of companies making implantable devices to have problems obtaining raw materials. Experts estimate that 40,000 to 50,000 new jobs could be lost in the next five years, not to mention the loss of creative talent and prestige for American medicine. "When the FDA doesn't keep up with the times, it is time to administer a dose of tough love," says Oregon Congressman Ron Wyden.

Love Your Neighbor, but Don't Cut Down Your Hedge

The American Academy of Ophthalmology's plan to affiliate with LensCrafters in a vision program was not greeted with universal glee by members. Several letters published in *Argus* were critical, stating that the AAO is urging physicians to establish their own optical facilities, so why get into bed with a national dispensing company? The coup de grace was applied to the plan when Luxottica bought out LensCrafters. Immediately the huge optical company was faced with alienation of opticians and optometrists, if the joint program with the AAO was pursued. That was a kick in the pocketbook that Luxottica could not afford.

The Market is a Place Set Apart for Men to Deceive and Get the Better of One Another

Every ophthalmologist knows about HCFA's plan to bundle cataract surgery into a single package, supposedly to set up *centers of excellence* for cheaper and easier Medicare management. However, after two years of struggle, the demo projects have not proven successful. The expected volume increase did not occur, and the required paperwork proved burdensome. This holdover from the Bush administration is still somewhere in the Congressional hopper, but is threatened by the budget-cutting agenda. Furthermore, the President did not include centers in his budget presentation to Congress.

Negative Slack Tends to Increase

Congress claims that Medicare dollars will be saved by pushing the elderly into HMOs, but a report from Department of HHS raises doubts. Not surprisingly, more than two-thirds of HMOs inappropriately screened Medicare beneficiaries by demanding physical exams and asking about health problems before allowing membership. That is a no-no called cherry picking. Also, more that one-quarter of HMO respondents said they did not get needed primary care or referrals to specialists when they were very sick.

Nothing is Illegal if 100 Businessmen Decide to Do It

The bean counters are pocketing billions in discounted medical care contracts, and the evidence is accumulating. Example: a patient is charged $1,000 for medical services, and is obliged to pay a copayment of 20%: in this case, $200. But, the managed care insurer had negotiated a discounted contract for half the usual fee, or $500. Instead of passing on the discounted fee to the patient, the insurer pockets the full $200. Consumers in 24 states have filed class-action suits against insurers and managed-care networks claiming similar abuses. Humana coughed up $6.25 million last year to settle a Florida suit, and CIGNA Corp in Arizona recently settled for $265,000 in a suit. Insurance executives argue that hiding discounts is not widespread, and that no affiliate has ever admitted wrongdoing in settlement agreements. Public confidence in managed care could be undermined. Admits Joe O'Hara, CEO of Health Insurance Association of America, "In that way it's a setback for the whole industry."

Gentlemen Start Your Enzymes

The *New England Journal of Medicine* reports on a new hazard for golfers. According to researchers at Vanderbilt University, those who venture into the woods in search of errant drives are four times as likely to develop tick-borne erlichiosis as those who just drop a new ball. According to Dr Sam Telford at Harvard School of Public Health, the disease is more common than Lyme disease in the southern U.S.

Envy Slays Itself by its Own Arrows

In Illinois, a tort reform law was recently enacted with a cap of $500,000 on noneconomic damages. A Senator who voted in favor of the legislation is a plaintiff in a pending malpractice case, and his attorney is so angry that he wants to withdraw from the action. Because the Senator's complaint preceded the new law, it will not be effected. However, the attorney is incensed, claiming that the legislator has helped to take away future victims' rights, so to continue to represent the Senator would be a conflict of interest.

Addenda

- Every 27 seconds another computer is connected to the Internet.
- Cost to taxpayers of Richard Nixon's funeral: $311,039.
- He that makes haste to be rich, shall not be innocent.

Aloha and keep the faith— rts ■

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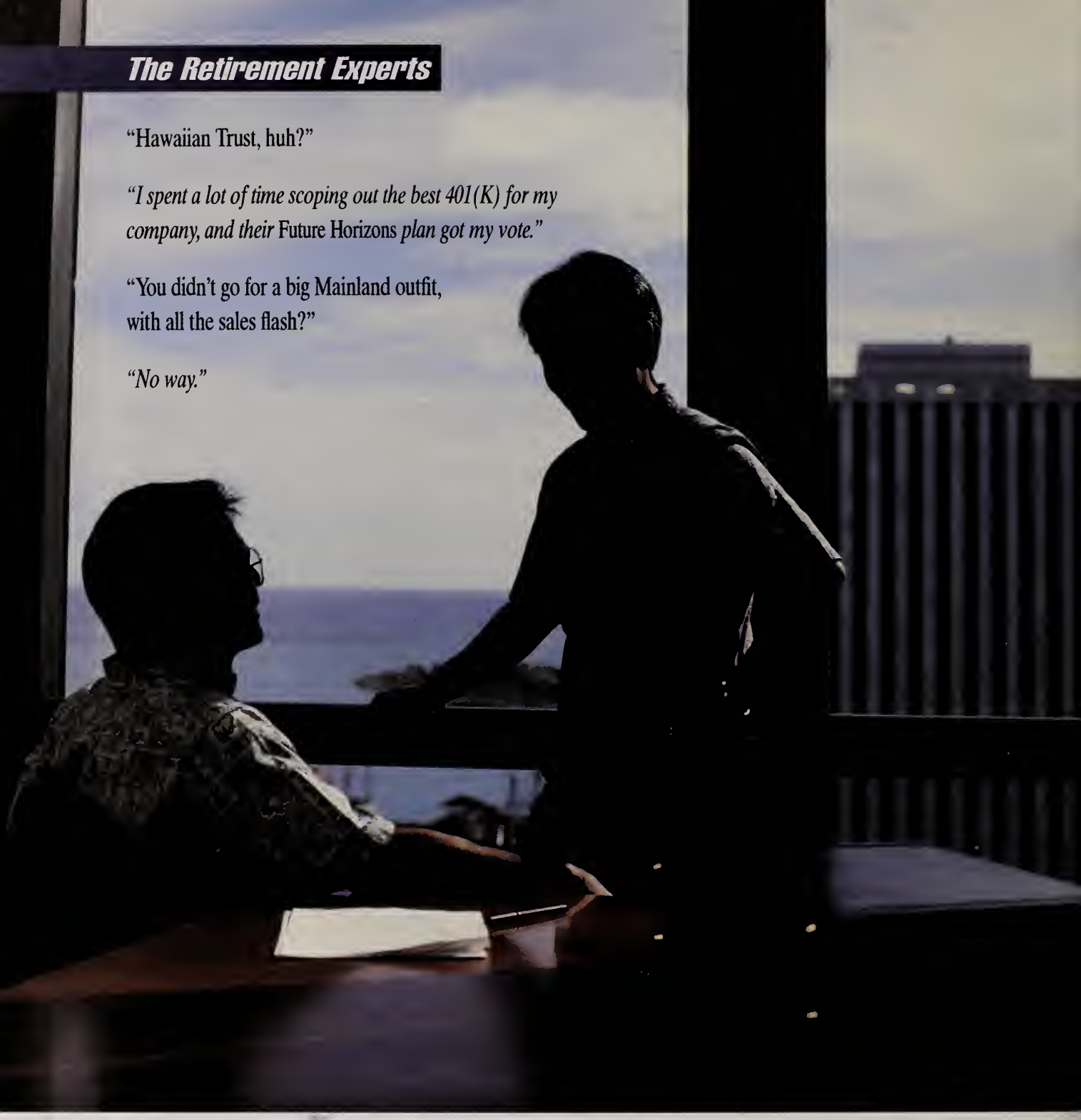
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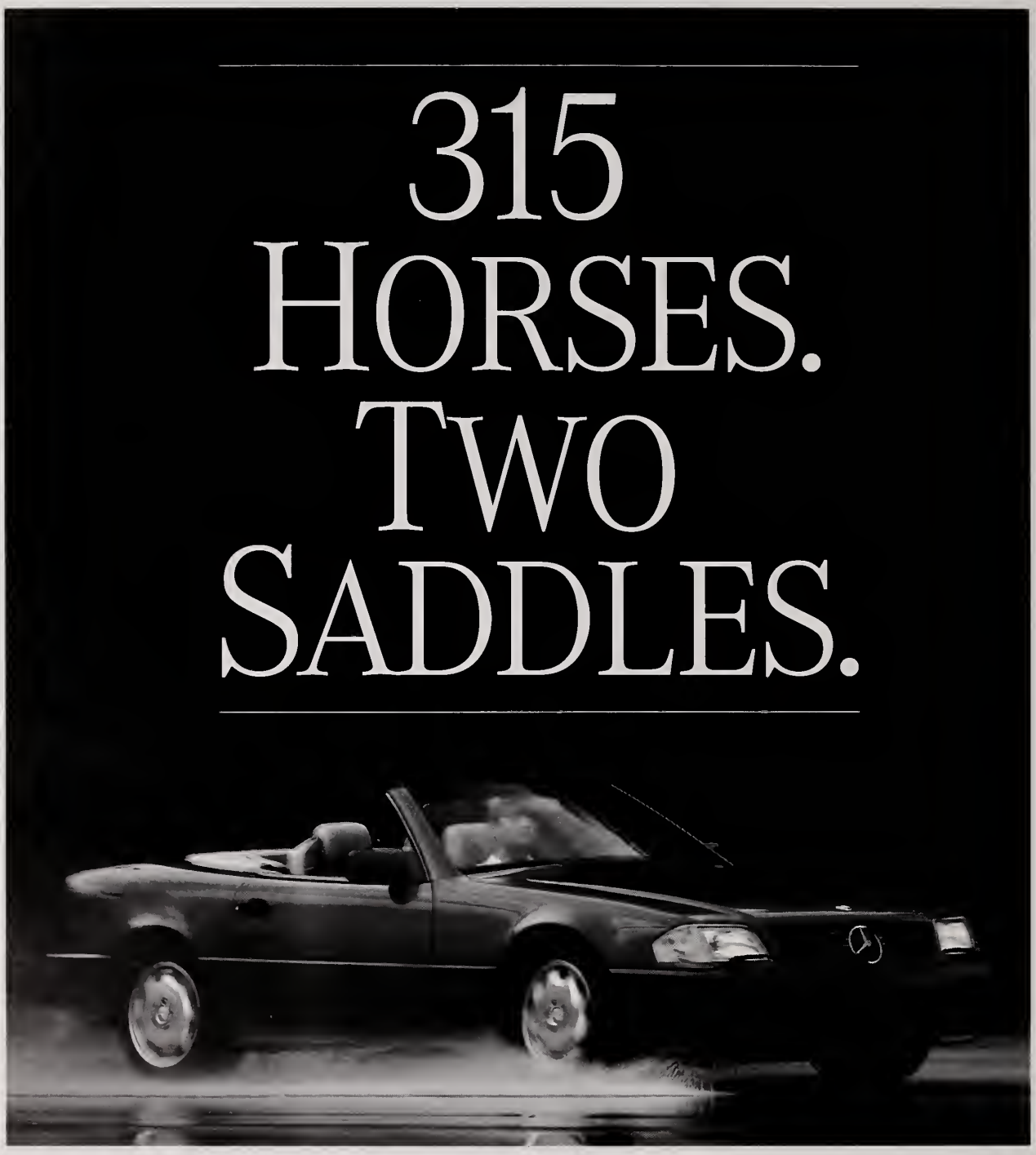
Celebrating 100 Years of Community Service

During the early part of the century, Palama Settlement met the health needs of the people of Honolulu with public health nurses and a network of dispensaries, including this Punchbowl location which served the Portuguese community.

The Journal gratefully acknowledges Jacqueline J. Rath who provided the photographs in this issue. She established and runs the Palama Settlement archives.

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Editorial

Norman Goldstein MD
History of Medicine in Hawaii

This month's special issue was a labor of love for its guest editors, Alfred Morris MD and John Breinich MS. The editors not only chose a panel of experienced clinicians, writers, and historians, they also made contact to get advertisers to pay for the extra pages in this issue. Without our financial supporters, we just cannot publish special issues. Each of our past special issues has become a sought-after collectors' edition—classics in medicine, and as you read and reread this issue, you will agree it is a classic.

Al Morris, internist and cardiologist, retired from The Honolulu Medical Group but could not stay retired. He now runs the Hansen's disease program at Hale Mohalu and Kalaupapa. He also runs marathons: eight of them, and two 50-mile runs! Al worked with Jack Scaff MD to establish the Honolulu Marathon Clinic where Jack was often heard to say, "the reason Al Morris never gets injured is he runs so slow, he heals up faster than he breaks down." Fortunately, Al worked full speed with John Breinich on this issue. His big goal for retirement is to write a history of medicine in Hawaii. This issue has served as an impetus toward attaining that goal.

John Breinich, Executive Director of the Hawaii Medical Library since 1975, earned a BA in psychology and MS in library science. As a member of the Board of Governors, and President for several years, I have seen John perform many juggling acts dealing with physicians, nurses, students, school administrators, politicians, hospital administrators, library staff, computers, and more computers.

John also has been active in libraries throughout the People's Republic of China, having lectured on library science in all of the major cities there. He has established a true *China Connection* between libraries in China and Hawaii. Because of his interest in the history of medicine, he helped establish the Hawaii Society for the History of Medicine and Public Health in 1993. The Society meets at the Medical Library monthly. He also serves on our Editorial Board.

Thanks to Al and John, their authors and advertising sponsors, for making this a historic issue.

HMA President's Message

Carl W. Lehman MD
President's Acceptance Speech

Tonight is very special and exciting for me. I am honored that you are here to help me celebrate this auspicious occasion, and I am looking forward to an exciting and productive year as President of the Hawaii Medical Association.

I would like to express my sincere appreciation to Fred Holschuh for his devotion and dedication to HMA this past year. He has left big footsteps for me to follow. Fred has regularly devoted two days of his time each week to HMA activities, traveling to Honolulu and attending meetings. That means that his wife, Diane, was at home without Fred at least 29% of the time this past year, and on behalf of all of us at HMA, I thank her for her support and generosity in sharing her husband with us.

I'd also like to acknowledge the leadership of the AMA, who are strong supporters of our organization. AMA President Lonnie Bristow MD joined us last July at our managed care conference.

I have attended a number of AMA annual or interim sessions during the past four years, and I was impressed by another AMA leader, Dr Daniel "Stormy" Johnson, Jr, who served as Speaker of the House. I first met him at Dr Bristow's inauguration reception. When he learned of my new role with HMA, his parting words to me were, "If I can ever be of help to you, please call on me." As you can see by his presence tonight, those were not idle words. I called. He came. And I am honored to be installed by such a great leader.

HMA's success is based on the efforts of those seated on the stage and other past presidents who could not be here tonight. My special heartfelt thanks goes to Dr Russell Stodd for his stellar performance as our emcee this evening. Finally I extend my warmest congratulations to Cherlita Gutteling as the incoming President of the HMA Alliance.

- A pessimist curses the wind.
- An optimist thinks the winds will change.
- A realist adjusts the sails.

As HMA members, we have these three options before us. We can be pessimistic—cursing the winds that blow laws and legislation toward the medical system with hurricane force.

We can curse the adversarial legal system and the threat of lawsuits that force us to practice costly defensive medicine.

We can strike out against insurance and governmental third-parties that burden us with paperwork and regulations that add to the cost and inefficiency of practicing medicine.

If we were optimists, we would expect that the winds of change would suddenly sweep across our country, causing legislators to develop laws that make a priority of protecting the doctor-patient relationship.

We'd be certain that society would be caught up in the breeze and would work each day to eliminate the social and economic ills that plague us all.

And we'd know, without a doubt, that even our patients would allow these winds to turn them in the direction of habits and lifestyles that would lead them to healthier lives.

As realists, however, we need to face the truth.

We need to set our sails to weather the sea of change before us—and there will be many changes.

We need to set our course toward the new century of medical practice—an uncharted course that lies before us.

And we need to prepare for that journey *now*. It will not be an easy course to navigate.

Doctors today are expected to provide a wide range of services, recommend the finest of treatments, and improve patients' quality of life. On the other hand, we are also expected to keep expenses to a minimum, limit the use of services, increase efficiency, shorten the time spent with each patient, and use specialists sparingly.

The days of the simple doctor-patient relationship are gone. As the business of medicine becomes the focus, the professional relationship between the patient and the physician is in danger of being ignored.

It is one of the missions of the HMA to protect that relationship and we will address all the issues necessary to keep that commitment.

We will intensify our efforts this year to increase the membership of HMA and AMA and look to you to help us. If each of you in our audience tonight, physicians and Alliance, encouraged just one other physician to join us, we would be able to double our voice in

the political and community arenas where we must be strong to be heard.

The HMA officers are committed to managing the organization within our budget. To do this, we are exploring ways to supplement our income from sources other than membership dues.

One of the options being reviewed is a centralized verification of credentials. Who is more qualified to collate and verify the credentials of physicians than the HMA? This would be done as a valuable service to various medical facilities, for a fee, and this could add to the HMA coffers.

One of HMA's goals has always been to have a solid and strong political coalition representing us at the State Legislature. With Dr Thomas Au at the helm of our Legislative Committee, coordinating the physicians who testify and deliver our opinions to the legislators, and with Dr Leonard Howard as our full-time lobbyist, along with members of our staff dedicated to sharing that work load, I believe we will be a strong force to be reckoned with during the 1996 Legislative session.

To reconnect with the communities we serve, we will encourage each member of the organization to become a voice in his or her own field of expertise, to begin to make a difference in helping us to correct the underlying problems that contribute to the ill health of the people here in Hawaii.

It has been estimated that 50% to 70% of the cost of medicine could be eliminated by abolishing preventable diseases. Eliminating use of tobacco products would cause a marked decline in cancers, lung and heart diseases. Education could help prevent domestic violence and the spread of AIDS. The focus on information and perhaps, more importantly, on personal responsibility to self, and community, could help to make our population and society a much healthier one. We need to take the lead as medical professionals to make this happen.

Many doctors do not realize the role that HMA plays in their careers. HMA continues to be the voice for the medical profession in this state. We have met with Governor Cayetano to discuss his attempt to bring outside medical groups to Hawaii. We have discussed with the governor and lieutenant governor the importance of maintaining an active Medical Claims Conciliation Panel.

As a partner in Vision 2000, we have helped to create the nongovernmental Hawaii Health Council.

And this is just the beginning.

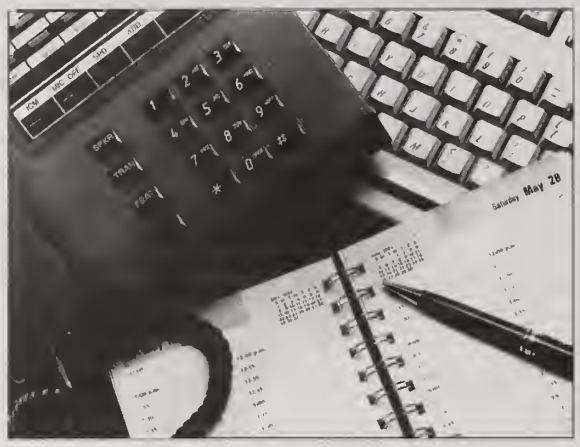
I am very impressed with the hardworking core of members who seem to bear the burden of making things happen within the HMA, and I want to thank all those members who have demonstrated their commitment by devoting countless hours. I look forward to seeing that commitment shared by more of us in the coming year.

I have called a meeting of the leadership for Sunday morning, October 29. We will discuss the current status of HMA, but more importantly, our immediate priority will be to set our goals for the coming year. This meeting will give all committee leaders an opportunity to intermingle and make plans.

In the words of anthropologist Margaret Mead, "Never doubt that a small group of thoughtful, committed citizens can change the world—indeed, it is the only thing that has."

As your captain, I am ready to set the sails and begin our voyage. Please join me as we begin our journey—it might not always be smooth sailing, but the destination—a healthy future for our state and HMA—will be worth the trip.

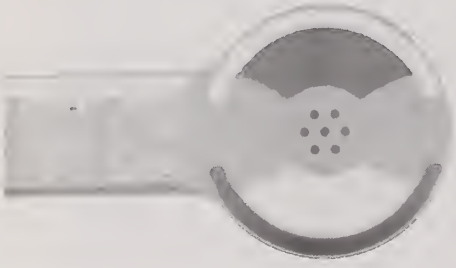
Thank you for electing me your President. It is both an honor and a challenge. I love challenges!



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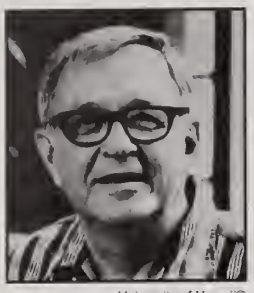
Congratulations!



Dr. Frederick C. Holschuh, Past President of the Hawaii Medical Association.
You had a great year!
Mahalo nui loa for your support of Hawaii's medical professionals.
We also thank your wife Diane for her understanding, patience,
and help during your term.

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About the Authors



University of Hawaii©

The Antiquarians
O.A. Bushnell

O.A. Bushnell is emeritus professor of medical microbiology and medical history of the John A. Burns School of Medicine, University of Hawaii. He was born and raised in Honolulu, received his BS in science from the University of Hawaii, and his PhD in microbiology from the University of Wisconsin. He is the author of numerous historical novels about Hawaii and co-author of three histories about Hawaii. It is fair to say that as a founding member of the Hillebrand Society, he is the medical antiquarian of record for Hawaii.



Thoughts on the Relevance of Medical History
David M. Morens MD

David M. Morens never liked history in school. After receiving an AB in psychology from the University of Michigan (1969), without setting foot in a history class, he went on to receive an MD (Michigan, 1973), with board certification in pediatrics (1978), preventive medicine (1980), and specialty training in pediatric infectious diseases. In seven years at the U.S. Centers for Disease Control (CDC), he was chief of the branch that dealt with exotic viral diseases, and a member of the initial research team investigating a new disease later known as AIDS. Two of those CDC years were spent in a west African jungle outpost studying Lassa fever; the rest were spent in frequent disease investigations in the Middle East, the Caribbean, Africa, Asia, and the Pacific. Noting that flying from one culture to another has much in common with travel through time, Morens credits globe-trotting with his delayed interest in history. A professor of tropical medicine at the John A. Burns School of Medicine since 1982, Morens has authored more than 200 scientific articles and textbook chapters, including a growing number of historical explorations. He has been the prime mover in establishing the Society for the History of Medicine and Public Health, the current revival of the Hillebrand Society.



Medical Progress in a Remote Archipelago
Robert C. Schmitt

Robert C. Schmitt was born in Cincinnati, Ohio, in 1922. He received both a BA and MA in sociology from the University of Cincinnati. At the University of Michigan, he undertook additional graduate studies, specializing in statistics and demography. Brought to Hawaii in 1947 to serve as research statistician for the Public Health Committee of the Chamber of Commerce of Honolulu, he was designated State Statistician in 1963 by Governor John A. Burns and continued in that position until his retirement in 1992. He is the author or co-author of four books, more than 200 articles, and numerous unsigned government reports. Seventeen of his articles have appeared in the *Hawaii Medical Journal*, the first in 1949 and the most recent in 1986. He is noted for his *firsts* in Hawaii and his present article explores just how long it took for technologic discoveries to arrive in Hawaii.



Palama Settlement: 100 Years of Serving a Neighborhood's Needs
Paula Rath

Paula Rath is the granddaughter of the founder of Palama Settlement, James Arthur Rath. She is the wife of Gerald Mayfield MD, chief of Orthopedic Surgery of Straub Clinic & Hospital. In addition, she has worked in communications in the medical field for more than 20 years, including positions with the Blood Bank of Hawaii, Straub Clinic & Hospital, HMSA and the Hawaii Ophthalmological Society. Paula's father, Robert H. Rath, Sr, continues the family legacy at Palama Settlement as an emeritus Board Member who spends a great deal of his time and expertise raising money for the Settlement. He also served as president of the Health Facilities Planning Council from 1964 to 1966. Her mother, Jacqueline Jacobs Rath, has spent the last three years developing an archive for Palama. Paula currently serves on the Board of Palama Settlement, chairing the Centennial committee.



Medical Society in the Early 1900s
Ann B. Catts MD

Ann B. Catts decided at age six that she would become a doctor, more specifically, a general practitioner. The best laid plans, of course, fell by the wayside when, during her internship year at Queen's Hospital, Dr Harold Civin, a pathologist and teacher, proved a powerful influence on her career. This experience lead her to take a residency in pathology and spend a long professional career in the pathology department of the Queen's Medical Center. Her interest in history has run parallel with her interest in medicine and science, and she contributes much time and effort to projects at the Hawaii Medical Library. Her article in this issue was generated by one of those projects. She is a past president of the Honolulu County Medical Society and the Hawaii Medical Association, and is now retired from practice.



The Epidemic That Never Was: Yellow Fever in Hawaii
Alfred D. Morris MD

Alfred D. Morris was born and raised in the Appalachian mountains in the coal mining country of western Virginia close to the Kentucky state line. He received his undergraduate degree in psychology and his MD degree at the University of Virginia (1955). He spent 12 years in the U.S. Army receiving his training in internal medicine at Tripler Army Hospital, and in cardiology at Letterman General Hospital, San Francisco. After tours at Fort Ord, California, Korea, Armed Forces Institute of Pathology and Fitzsimmons General Hospital, he and his family returned to Honolulu (1967). Morris retired from the Honolulu Medical Group after 17 years, but continued in private practice until 1992. Before retiring from the Army Reserve, he was the Commander of the Tripler USAR Augmentation Hospital. He has held many positions at Queen's Hospital and with the Hawaii Heart Association, and is now clinical associate professor of medicine at the John A. Burns School of Medicine, University of Hawaii. He is currently acting medical director of the Hansen's disease program at Kalaupapa and Hale Mohalu Hospital. His present interest in the history of medicine he attributes to his wife who is a senior librarian at the University of Hawaii, Hamilton Library, and she holds a PhD in history.



Plantation Medicine in Hawaii 1840-1964: A Patient's Perspective
Lela M. Goodell

Lela Goodell was born and raised on an Iowa farm and grew up with nine brothers and sisters. After receiving a BA degree from Morningside College, Sioux City, Iowa, she taught elementary school for a brief time. She arrived in Hawaii in 1949 with her husband who had taken a position at the University of Hawaii. She lived for seven years on Kauai while her husband was the county agriculture agent and later ranch manager for Kekaha Sugar Company. It is this period that she describes so well in this issue's article about plantation medicine from a patient's perspective. Lela received her master of library studies degree in 1975 from the University of Hawaii. She worked 28 years as cataloging librarian at the Mission Houses Museum. In 1989 she inventoried and indexed the archives of the Polynesian Voyaging Society housed at Kamehameha Schools. After a few years of retirement she accepted a contract from Bishop Estate/Kamehameha Schools to sort and arrange the extensive papers of the late Frank E. Midkiff, president and trustee of the estate for nearly 50 years. Lela is a charter member of the Women's Campus Club hikers. She has hiked New Zealand, Australia, Japan, Germany, France, England, Grand Canyon and most of all, Hawaii.



Plantation Doctor
Rodman Miller MD

Rodman B. Miller, born November 27, 1924, in Orangeburg, South Carolina, grew up in Baton Rouge, Louisiana, adjacent to the LSU campus where he later received his undergraduate degree. World War II and duty overseas in the field artillery intervened but he graduated in June, 1950, from the Louisiana State University Medical School in New Orleans. Following internship at Shreveport Charity Hospital, he again saw active duty, for two years, with the Army Medical Corps as Regimental Surgeon, 82nd Airborne. After a year of surgical residency at Colorado State Hospital, he entered a rural practice in that state. The move to Hawaii in 1961 and his practice as plantation physician is affectionately told in this issue. He and his family continue to serve and be an integral part of the Haleiwa community. In 1973 Dr Miller was certified in family practice and all recertifications are current. Numerous interests include gardening, windsurfing, glider flying, photography, and jogging. But his biggest interest is providing quality community service through a successful family practice clinic.



How Open Heart Surgery Came to Hawaii
Scott C. Brainard MD

Scott C. Brainard was born on January 15, 1922, in the old Kauikeolani Hospital on Kuakini Street to the sound of the gun salutes as the royal cortege accompanied the body of Prince Kuhio up Nuuanu Avenue to the Royal Mausoleum. He graduated from Punahou in 1939; Green Mountain Junior College, Puoltney, Vermont, in 1941; and the University of Virginia in 1943. That year, before entering the Medical College of Virginia, he read a book titled *Consultation Room* about the wonders of delivering babies. He was convinced that obstetrics was his calling. Graduating in 1946, he returned to Hawaii to start his internship at Queen's Hospital but after his first night on OB he concluded that he was just an unneeded appendage to the process and changed to a surgical rotation. His payback time for the Army was completed on the surgical service of Murphy General Hospital, Waltham, Massachusetts, and surgical residency at Yale New Haven Hospital followed. After a year of general surgery practice at the Honolulu Medical Group, he took two years of thoracic surgical training at the University of Oregon, including heart and vascular surgery. The Oregon Heart Association awarded him a grant to study the feasibility of cross donor circulation. He returned to Hawaii just at the time Dr DeWall used the first bubble oxygenator. How heart surgery came to Hawaii is his personal story. Dr Brainard is now retired from medicine and lives in Ontario, Oregon.



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The Antiquarians

O.A. Bushnell PhD

Historians and other sorts of antiquarians in Hawaii have been meeting to discuss the history of medicine since 1932 when the History of Medicine Society was formed. The Society was not long lived, but another group was established in 1964 called the Hillebrand Society which continued until 1972. History repeats itself and in 1992 the Hawaii Society for the History of Medicine and Public Health was founded.

Historians and other sorts of antiquarians are a necessary if curious breed. Usually the older members in a community, they serve as keepers of information that, without them, would be lost to younger folk, who are unaware of matters belonging to the past. This is a natural consequence of "the generation warp," as Dr D.M. Morens calls it in his latest report on the activities of the Hawaii Society for the History of Medicine and Public Health (long may it flourish!) For pertinent illustration about the need for antiquarians, most members of HSHMPH did not know until recently that their society has been preceded by at least two similar organizations, right here in Honolulu.

The first of those, bravely named The History of Medicine Society, was formally founded in March 1932. According to Mrs Nancy Nickell Fennel, who was there that evening, the organizing meeting was held at the home of Dr Hastings H. Walker, at that time on the staff of Leahi Hospital. Dr Henry L. Sigerist, the famous historian of medicine, had visited Hawaii in February. Dr Eric A. Fennel, Nancy's husband, and the pathologist at the Straub Clinic, took Dr Sigerist to see the Leper Settlement at Kalaupapa. On their return to Honolulu, Dr Sigerist confessed to Mrs Fennel that he had been scared to death by the terrors of the mule trail leading from topside Molokai to the Settlement far below.

Obviously, during his stay in Honolulu, Dr Sigerist stirred up some interest in the history of medicine among local physicians. In a reminiscing and undated letter she wrote many years later (to an unknown recipient), Nancy Fennel named the distinguished physicians who gathered at Dr Walker's home in Manoa Valley on that evening in March 1932:

> N.E. Wayson, USPHS, stationed at the Kalihi Receiving Station (sometimes referred to as the Leprosy Investigation Station in Kalihi); Robert Perlstein, an associate of Dr Walker at Leahi Hospital; Harry L. Arnold, Sr, and Eric A. Fennel of the Straub Clinic; Nils P. Larsen and Francis Halford of the Medical Group; and Frank L. Pleadwell, Captain USN (Ret). During the evening, Bob Perlstein gave a talk on Robert Koch.

Alas for the iniquity of oblivion, as Sir Thomas Browne lamented, in distress for famous men of all times. Who among us today remembers even the names of those potent doctors in Hawaii's medical history or their contributions to our progress? They were virtually the daimyo, the great names, in the haole medical establishment of their time.

Apparently that first History of Medicine Society did not continue for long; nothing more is known about further meetings or later speakers. Without Nancy Fennel's gossipy letter, probably written to Dr Charles S. Judd, Jr, or to Dr John Stephenson, we today would not know that it had led the way along which we follow. We need not wonder why that society did not endure. Those great men were too busy, professionally and socially, to spend many evenings listening to someone talk about the dead or dying past.

Yet, as is the way with all emerging generations, the need to think about the past persists in a few younger people. In the early 1960s, two energetic young physicians, able to look backward as well as forward, decided to create another society to consider the history of medicine: Dr John Stephenson, a pediatrician with the Straub Clinic, and Dr Charles S. Judd, Jr, a surgeon in private practice. With a fine sense of local history, they called it the Hillebrand Society.

Hillebrand you ask? Who was he to be so honored? Now nearly forgotten, Dr William Hillebrand (1821-1886) was one of Hawaii's most remarkable physicians and citizens during the 19th century. Trained in Germany, he arrived in Honolulu about 1851, accompanied by his wife and two young sons. After establishing a thriving practice here, he was chosen to be the first medical director of The Queen's Hospital when it was founded in 1859. His observations on patients seen both in the hospital and in his chambers caused him to warn the kingdom's Board of Health about the increasing numbers of lepers among native Hawaiians. This warning, of course, led to the Act to Prevent the Spread of Leprosy passed by the Legislature in 1865. In consequence, beginning in 1866, all persons suffering from Hansen's disease were segregated at the Leper Settlement on Molokai.

A botanist too, Hillebrand collected and classified most of the plants, both native and introduced, growing in Hawaii at that time. From this prodigious collection he prepared the manuscript for *Flora of the Hawaiian Islands*. Published posthumously in 1888, it was the best general authority on Hawaii's flora for more than 60 years.

In the mid 1860s, as the kingdom's roving commissioner for immigration traveling in Asia, Dr Hillebrand arranged for the importation of contract laborers to work on Hawaii's sugarcane plantations: More Chinese workers arrived in 1865 (the first group had come in 1852), and the first Japanese contract laborers, the celebrated *Gannen Mono*, arrived in 1868. Moreover, during his travels in Asia he sent back to Honolulu an assortment of interesting plants and birds to adorn his estate here. Many of the plants still grow just where he planted them in the preserve now known as the Foster Botanical Garden, because Mary E. Foster bought the property after Hillebrand and his family left the islands, about 1880. They settled in Montreux, Switzerland, where he completed the manuscript for his *Flora of the Hawaiian Islands*. Even there he continued to help Hawaii: he was the intermediary who advised Walter Murray Gibson, then president of the Board of Health, to invite Dr Eduard Arning, one of Europe's first physicians to be trained in the new discipline of bacteriology, to come to Hawaii in order to "study the problem of leprosy."

In short, because of his significant influence on the medical, the

social, and the natural history of Hawaii, Dr Hillebrand seemed to be a man deserving of honor by successors who shared his many interests.

And yet, unhappily, he is all but unknown today. No street is named for him, no building, no memorial of any kind, certainly not the society that bore his name, not even the botanical garden that he established around his home. *Hillebrand's Glen*, somewhere in Nuuanu Valley, was named for him, but now no one knows where to look for it.

The Hillebrand Society held its first official meeting on December 16, 1964 "in the corner of the main reference room of the [new] Hawaii Medical Library." (Naturally, obligatory refreshments were served.) Dr Stephenson presided, Dr Judd served as scribe. His minutes reported that "Dr Ilza Veith, Professor of the History of Medicine at the University of California [Berkeley] was present, and gave some excellent counsel on the organization of the society." In a fated preview of this belated rerun, "Prof O.A. Bushnell presented an interesting biographical sketch of Dr William Hillebrand, physician and botanist, one of the great early doctors of Hawaii."

In 1966, following the example of his great-grandfather, Dr Gerrit P. Judd (who came to Hawaii as a medical missionary in 1828), Charlie Judd went with his family to Western Samoa for a two-year period of service. John Stephenson happily reported that in 1967 the Hillebrand Society had 42 charter members. Then, in the fall of 1968, most untimely and much too young, Stephenson died. Upon his return from Samoa in that same year, Charlie Judd became the society's acting president.

And, at that time, Dr Windsor Cutting, dean of the University of Hawaii's newly founded medical school and a member of the Hillebrand Society, appointed Dr Judd the school's first professor of medical history, as well as a clinical professor of surgery.

Inevitably, some of those 42 charter members died or moved away. Most of the steadfast rest, predictably, having "a grand memory for forgetting," as Robert Louis Stevenson wrote, did not bother to attend the meetings that diligent Dr Judd arranged for them. In 1972 he sensibly gave up the struggle to keep the Hillebrand Society alive.

Among the present generation of people who are interested in medical history few remembered that the Hillebrand Society had ever existed. Even sadder: No one knows whether or not comparable societies exist that are concerned with Hawaiian, Chinese, and Japanese medical history in these islands—or elsewhere.

Even so, as always, history does repeat. In 1992, a small group of hopeful folk founded the Hawaii Society for the History of Medicine and Public Health. Long may it flourish.

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Thoughts on the Relevance of Medical History

David M. Morens MD

Clinicians are, by their very nature, historians—a question remains as to whether and how the history of medicine should be studied as a subject. In recent years medical educators have increasingly answered this question by deleting medical history from the curriculum. But this may be a mistake: among other things of value, medical history provides a much-needed perspective of medical knowledge, and a pigeon holer into which essential new facts—basic, clinical, whatever—can be filed without getting lost. But linear learning, *the piling-on of facts, is more likely to bring exhaustion than comprehension.*

In learning how *ontogeny recapitulates phylogeny*, every medical student is exposed—consciously or not—to nature's historical sense. Tiny nucleic acids predict and define our descendants' descendants, *ontogenizing* and *phylogenizing* each of them. Contemporary molecular history lessons, spanning millions of years, are carried in every cell of our body. But our day-to-day lives are lived in, and sometimes for, the moment; even as scientists we may escape historical awareness. Nor is the future readily appreciated when the past, which will produce it, is not remembered. This very human phenomenon may have particular relevance for physicians and the things physicians do. Or so physician-historian Ilza Veith MD apparently thought in noting nearly 30 years ago that "the science of medicine... sometimes appears to think of itself as having been generated spontaneously and as being without a history."[1]

But it can be argued that physicians are, and must be, historians if we successfully practice the art, that we may have more of a historical sense than we realize. For example, one of our most basic skills is taking a medical history. In doing so we investigate not one patient, but 100 patients from the past. We write: "Mr Kane, a WDWN 32-year-old Hawaiian male...", but also discover Mr Kane, the 22-year-old man who tore a knee ligament in the BYU football game; Joe Kane, the 16-year-old boy who stuck that first cigarette in his mouth after class; Joey Kane, the five-year-old boy who got his last tetanus shot after stepping on a pop top; Joseph Kalani Kane, the day-old infant with the reaction to silver nitrate. Nor does the physical examination escape the subsumption of history: a scar that betrays a prior operation; a word written in a tattoo; a nicotine stain on the first and second fingers, right hand; a hard liver edge; actinic keratoses. Each represents the physician's discovery of the past; acceptance of the truth that to care for the patient today, the patient of the past must be examined too.

Our patients' historical experiences become our own historical lessons. In practicing medicine over a span of time we develop and organize an encyclopedia of these lessons, and draw on them repeatedly. Most of us have even unconsciously archetyped particular patients who have made some impression; patients who have come to symbolize lessons that must be recalled and reused. We may remember, for example, the obviously well infant on whom we did the spinal tap (anyway), and our amazement at finding all those white blood cells under the microscope. We are now more likely to tap the next patient if meningitis seems even remotely possible. We also find that lessons from our most recent patients disproportionately influence clinical decisions. Mrs Morinaga was unexpectedly found to have papilledema on routine examination last week. This week, you will look particularly carefully at everyones' *eye grounds*. Such actions characterize our awareness of history in clinical practice: yesterday's experiences suggest what could happen tomorrow. History lessons become part of every physician's professional encyclopedia.

Physicians conceptualize not only clinical experiences, but also the lives of patients and of diseases along *time lines*. The time line, usually drawn as a horizontal arrow pointing to the right, is a device used in logic to demonstrate temporal associations between distinct events. In the case of a human life, the line might begin at the left, with birth, and end at an arrow tip on the right, with death. The arrow moves, from left to right, as time moves. In between, on the arrow itself, we mark off events of importance, such as an operation, an illness, a mammogram, low blood sugar. We arrange the relevant personal and health events of individual patients along this time line, and we perceive the manner in which the progress of time connects and separates these events. We also learn the natural history of every disease: all of the hard facts in Cecil & Loeb, ordered and arranged by time's evolutionary unfoldings. We examine association and causation along this line: Mr Kane started his pack-a-day habit at age 16; today he has severe bronchitis. Even if we examine the patient at only one point in time, we seek to investigate, imagine, and understand what came before and what is likely to follow. We must do so if we are to diagnose, prognosticate, inform and counsel patients, select treatments, and recommend preventive measures.

We adopt other historical perspectives as well. We attempt to understand human diseases of complex etiology. We go beyond the one-dimensional limitations of the time line in learning how diseases result from the interactions of agent, host, and environment (traditionally depicted in textbooks by an isosceles triangle, with each of the three disease-producing factors occupying one of the apices). We thus understand that diseases do not result merely from *linear* processes, but from *complex webs of causation* that cannot be conceptualized one-dimensionally. What caused Mr Kane's myocardial infarction? Cigarettes? Obesity? A sedentary life-style? Hypertension? Job stress? Marital stress? High LDL? High LDL:HDL ratio? Too many beers? Chronic hyperglycemia? Family history? We may decide that while it is all of those things, it is not any one of them alone. It is such a causal web that we refer to in saying that a condition is *of multifactorial etiology*. Similarly, in arriving at a diagnosis we mix and assemble, shuffle and remix facts into a coherent picture. Hawaii medical philosopher Kenneth Kipnis has called this decision process *the recognition of patterns*, to

distinguish it from decision making by algorithm. It, too, is part of our historical sensibility.

This historical orientation of ours allows us to *think clinically* because it is about the integration of facts. Physicians must ultimately decide and act, which means we must be able to sort and prioritize facts and provisional conclusions, run scenarios and algorithms inside our heads, test our conclusions, repudiate, reconfigure, hypothesize, retest, look for consistencies and inconsistencies, update our ideational data bases, and rerun our programs over and over again. This is how clinical decision making proceeds. Our historical orientation involves systematic approaches and broad experience. It deals not with superficialities, but generalized detective skills applicable to clinical medicine. Is it coincidence that medical historians have for centuries been among the greatest clinicians, eg, Thomas Sydenham, Robert Willan, Sir William Osler, Harvey Cushing, and the greatest medical thinkers, eg, Kurt Sprengel, John Snow?

The fuller our historical perspectives, the easier it becomes to learn, retain, and apply the everchanging knowledge that keeps our clinical art current. There is a prevalent illusion that if we can only chase the minutiae down one more alley we may at last arrive at a clinician's nirvana of *total knowledge*. This illusion is especially seductive when burgeoning technical advances provide a continual supply of new facts to find.

Facts may not stick unless they have something to stick to. Try learning a foreign language by memorizing successive words in a dictionary. Imagine this task without knowledge of the parts of speech. Richard Armour's hackneyed example of memorizing without comprehending is instructive. It was comparatively easy for Armour to learn that *in 14 hundred and 92, Columbus sailed the ocean blue*, until he began to suspect that maybe *in 14 hundred and 93, Columbus sailed the deep blue sea*. (And what about Leif Erickson?) What we know and learn, in a complex and ever-moving field, is determined by the architecture and organization of the bases of our knowledge, much as the roots of a tree determine whether branches will branch off, and how fully leaves will grow. As one physician put it: history is not the accumulation of *facts*, but rather is the way that those facts relate to each other.[2] Or another: the emphasis is on a web of connection rather than on discrete entities—on the meaning of facts in relation to historical patterns, configurations, and processes, not as absolutes in themselves.[3] Medical history can still serve as an organizing matrix, a foundation upon which comprehensive medical knowledge and skills are built.

Finally, we might ask what part and place remains for medical history in Hawaii? Living in the state with the briefest human habitation, it might be wrongly assumed that our history—including our medical history—should be the least relevant. That this may not be the case is apparent to anyone who reads the newspapers. As residents of Hawaii, we live in a present directly connected to the past, and demanding that the future evolve logically from it. We are continually reminded how, within the span of roughly 200 years *Hawaii nei* went from a collection of tribal states, to a kingdom, to a U.S. territory, to a state. Not only are the facts of this history still disputed, but even those facts accepted are presented in evidence of opposing conclusions that seem to mandate opposite actions. Hawaii is a state, a sovereign nation, or an abstract concept, depending on your reading of history. Its people are victims or rescuees, liberators or oppressors, visitors or trespassers, depending on your historical perspective. A better example of the fluid relevance of history, the continuum of past, present, and future, would be hard to find.

Hawaii's general history might appear irrelevant to medicine, but the climate of historical examination should at least encourage us to search our medical past for lessons obscured by dust and distance. What of leprosy? Does the history of stigmatization tell us anything about HIV infection today? What of the many health problems of Hawaii's native peoples? Of recent immigrants? Do they reveal weaknesses in our health care system? In our values? Do they provide litmus tests for the successfulness of the health care we provide? Why does retired microbiologist Ozzy Bushnell turn the pages of medical history to track the diseases that killed Hawaii's people 150 years ago? Why does Laurence Stuppy, a California surgeon, return to pick up the threads of a Honolulu epidemic he investigated 52 years ago? Why do Hawaii's libraries expand to shelve books by authors long deceased, on subjects since altered and updated? Why do scholars and physicians and students unsettle the dust on these old books? Some of these questions will hopefully be answered in the pages of this volume.

As Osler viewed it, and as modern historians view it still, medical history moves and changes inexorably as a living, breathing, dynamic and rambunctious process. It must not be an antiquarian product to be served up with crumpet cakes and tea; nor the sludge of decomposing medical knowledge; nor a dustbin for discarded ideas. Rather, medical history is a black bag containing the instruments of the past, present, and future; a dimension within which medical knowledge serves the art. As physicians each of us can, and probably should from time to time, re-explore some of its useful and fascinating lessons.

When we uncover history, we discover ourselves. Who we are, what we have achieved, where we are going. Where we must go.

Acknowledgments

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Medical Progress in a Remote Archipelago

Robert C. Schmitt

Just how long has the lag been in local acceptance of medical progress? Five major innovations are examined: vaccination, anesthesia, antiseptic and aseptic surgery, x-rays, and antibiotics. Hawaii has not always been in the forefront of medical progress, but generally has been quick to adopt new treatments and technologies.

Mainland observers, and even some island residents, have sometimes assumed that Hawaii has been slow to adopt innovations originating elsewhere. Late 19th century writers, for example, often expressed surprise on finding Honolulu to be a modern metropolis with telephone service and electric lights. Hollywood films of the 1920s and 1930s typically portrayed modern Hawaii as a backward land of thatched huts, happy plantation workers, and compliant sarong-clad Polynesian maidens. More recently, local economists have argued over the duration of time lags between national business cycles and their Island echoes. And a 1994 Congressional candidate peevishly blasted Hawaii's voters for being out of step with Mainland political trends. Such assumed laggardly tendencies have usually been attributed to geographic remoteness, compounded by a lotus-eating *Polynesian paralysis* and cultural insularity.

Given these stereotypes, medical historians might conceivably ask: Have medical advances been similarly slow to reach Island practitioners? Just how long has the lag been in local acceptance of medical progress?

In an effort to answer these questions, five major innovations are considered: vaccination, anesthesia, antiseptic and aseptic surgery, x-rays, and the antibiotics and other *miracle drugs*. All five of these developments, of course, are now more than 50 years old, and thus offer little insight into Hawaii's current adaptability to medical progress. A different selection of examples, moreover, might lead to somewhat different conclusions. Even so, the following analysis might tell modern medical people something about their predecessors' willingness to accept advances in their own time.

Vaccination

Vaccination with cowpox matter in order to induce immunity to smallpox was first tried by English physician Edward Jenner in 1796. Direct inoculation with the disease, or variolation, had been in use for the same purpose for centuries, but had proven to be extremely risky. Jenner published his results in June 1798. Vaccination grew in popularity both in Europe and the United States throughout the 19th century, but smallpox remained a major cause of death for many years, especially in underdeveloped areas.[1-2]

In Hawaii, the earliest known vaccination attempts were those made by Dr Abraham Blatchely, a physician who served with the Sandwich Islands Mission from April 1823 to November 1826. According to Halford:

> Dr Blatchley found no smallpox in Hawaii, yet his wonder and relief were tinged by fear of the devastation inevitable when the scourge should come from one of the innumerable infected ports. Apparently he had requested the Boston Board to forward a stock of vaccine to him at Honolulu as soon as it could be obtained from London's inoculation hospital, sole source of the world's supply. It consisted of Woodville's arm-to-arm achievement of a complex vaccine fairly free from ulcerative termination...

Results were disappointing to Dr Blatchely, and he wrote to the Boston Board: "I regret that the vaccine injection sent by Capt Gardiner of Nantucket was too old—by the date of it about 18 months old before he sailed...It was good for nothing."[3]

Notwithstanding this initial failure, vaccination appears to have become an established procedure by 1839, when the next known historical reference to it occurred. In early June of that year, Richard Brinsley Hinds, the surgeon of the visiting British ship *Sulphur*, observed crowds of Hawaiians—"the old and the young, the chiefs of rank and the humble *kanaka*"—regularly assembled at the door of Dr T.C.B. Rooke to be vaccinated following a smallpox scare. "Eight or ten thousand have been vaccinated at Honolulu," reported Hinds.[4-5] This was apparently Hawaii's first mass immunization effort.

Vaccination efforts continued sporadically throughout the 1840s, although their effect was seemingly limited. Physicians involved in these efforts included Judd in 1841, Baldwin in 1842, and Lathrop and Wetmore in 1849.[6-9] When the inevitable epidemic finally struck, however—the first case was reported May 13, 1853, and the last January 14, 1854—fully 11,081 cases and 5,947 deaths occurred on Oahu alone, with another 887 cases and 448 deaths on the Neighbor Islands. As noted by Greer, "the widespread incidence of smallpox in 1853 proves either that immunization figures were grossly exaggerated, or that the process was ineffective for one reason or another, or both." [10-11]

In this example at least, medical progress was indeed slow to reach Hawaii: at least a quarter of a century elapsed between Jenner's 1798 report and Blatchley's ill-fated effort to secure vaccine, and more than 40 years between Jenner's announcement and the 1839 immunization push by Dr Rooke and his colleagues. Even so, it should be remembered that no trained foreign doctor lived in the Islands before 1811; any earlier adoption of vaccination would thus have been extremely unlikely.[1]

Anesthesia

Anesthesia was first used in surgery in the early and middle 1840s. In January 1842, William E. Clarke, a chemistry student of Rochester, New York, administered ether to a young woman for extraction of a tooth by a dentist, but failed to follow-up on the procedure. Two months later, on March 30, 1842, Crawford W. Long, a practitioner in Jefferson, Georgia, first used ether as a general

anesthetic for surgery, and repeated his experiment four or five times during the next four years; but he did not publicize this until 1849. Horace Wells, a dentist in Hartford, Connecticut, had one of his own teeth extracted under nitrous oxide, and after further trials gave a demonstration (deemed a failure) at Massachusetts General Hospital in January 1845. Finally, on October 16, 1846, William T.G. Morton, another dentist, demonstrated the application of ether as a general anesthetic for excising a tumor of the neck in an operation performed by Dr John C. Warren at the same hospital. Singer and Underwood conclude that "for practical purposes he [Morton] must be considered the discoverer of anaesthesia."[13] Add Bordley and Harvey: "Within a few months of this highly successful and thoroughly convincing demonstration, Morton's method was being used throughout the Western world to make possible surgical and obstetrical procedures which previously could not have been undertaken."[14]

The news of this breakthrough reached Honolulu late in August 1847 and promptly appeared as brief undated items in two local papers. Quoting the Boston *Journal*, *The Friend* said "Dr Morton, Dentist, No 19, Tremont Row, at the invitation of Dr Haywood, visited the McLean Hospital and administered his preparation to produce sleep, to a person about to undergo the operation of the extraction of a tumor from the neck." An almost identical note was carried two days later by *The Polynesian*.[15-16]

Ether was not unknown in Hawaii at this time. In 1845, James Smith, the Mission's doctor at Koloa, Kauai since 1842, complained of the poor condition of the medicines he had received, noting that "a bottle of Either" [sic] was poorly corked and its contents lost.[17] Dr Smith might have intended using the ether to treat pulmonary tuberculosis, as was commonly done at the time.[18]

The earliest known reference to the use of general anesthesia in Hawaii did not enter the record until February 16, 1850, when Dr Charles H. Wetmore, the Mission physician in Hilo, administered ether to his wife, Lucy, as she was giving birth to their first child. Dr Wetmore's subsequent account of this delivery was addressed to Dr Dwight Baldwin on Maui, establishing the date of this notable introduction to Island medicine. His casual reference to the anesthetic moreover suggests that its use was already known in Hawaii by that time.[19]

No similarly early record has come to light regarding the use of anesthetics in dental surgery in the kingdom. The first such reference seems to have been Isabella Lyman's 1868 journal entry reporting the extraction of a tooth: "He [the doctor] used the ether spray and they say I fainted after it." Since this event likewise occurred in Hilo, the doctor referred to was probably again Dr Wetmore.[20] Most likely, dental anesthesia was already common in the Islands by 1868, and earlier usage simply went unrecorded.

Given the slowness of transpacific communication in the middle of the 19th century, the first reported instance of anesthesia in Hawaii's medical history, more than three years after Morton's demonstration in Boston, does not seem unduly delayed.

Antiseptic and Aseptic Surgery

Antiseptic surgery had its origins in the work of Gordon, Semmelweis, Pasteur and Lister in the late 18th and mid 19th centuries. Alexander Gordon, an Aberdeen physician writing in 1795, contended that puerperal infection "was carried from an infected to an uninfected woman by the agency of the midwife or the doctor," and could be avoided by careful cleansing of the operator's hands and arms. A half-century later, in 1846, Ignaz Semmelweis, a Hungarian surgeon working at the General Hospital of Vienna, reduced puerperal fever deaths from 10%-30% to 1% of the pregnant women admitted by insisting on sterilization of the hands of students or physicians attending these women.[21] In 1865, Joseph Lister learned of Louis Pasteur's research on fermentation and putrefaction and, using carbolic acid, developed a systematic and successful method for achieving antisepsis in surgery. Lister's results were published in 1867. Pasteur, an outspoken proponent of the germ theory of disease underlying Lister's procedures, argued it before the French Academy of Medicine in 1878. It was proven beyond question in a paper by Robert Koch in 1879.[22-23]

Antisepsis was already popular in Europe by 1876, but it was resisted in the United States for another quarter of a century. As late as 1882, the American Surgical Association formally rejected the Lister doctrine.[24-25]

Aseptic surgery, involving the steam sterilization of instruments, sterile dressings, and rubber gloves, evolved during the last quarter of the 19th century. In the words of Bordley and Harvey, "Many American surgeons virtually bypassed the era of antisepsis but were quick to embrace the aseptic technique that began to supplant it in the 1880s." [26-27]

The germ theory, so basic to the new procedures, found ready acceptance in Hawaii. As early as 1882, at a time when the reality of germs was still hotly disputed by many U.S. physicians, a Hawaiian Board of Health report noted the role of germs in leprosy.[28] A year later, on November 8, 1883, Dr Edward Arning, described by Bushnell as "the first microbiologist in Hawaii" and "the first physician in Hawaii's history to use techniques of histopathology and microbiology in the laboratory diagnosis of infectious diseases," arrived to accept a position with the Hawaiian government.[29] An 1884 report found "parasitic germs" in Island cases of "consumption, gonorrhea and pneumonia," as well as leprosy.[30]

Historical references to the local adoption of antiseptic and aseptic surgery are much rarer, but the few so far uncovered suggest a reasonably early acceptance. In 1886, for example, Walter Murray Gibson, premier of the kingdom and president of the Board of Health, urged the building of hospitals with wards "so arranged that any one of them can be disinfected, or even torn down."[31] In 1903, Dr James Robert Judd, the first surgeon to use rubber gloves in surgery in Hawaii, began his practice in Honolulu.[32] A 1905 account of The Queen's Hospital described its "new operating-room and the facilities afforded for modern aseptic surgery."[33]

X-rays

The x-ray was discovered by Wilhelm Conrad Roentgen of the University of Wuerzburg on November 8, 1895 and announced to the press January 6, 1896. The first U.S. physician to use x-rays in his practice did so in Chicago on February 11, 1896. Thomas Edison invented the fluorescent screen by the end of March.[34-36]

Hawaii, not yet linked to the Mainland by cable or radio, first learned of Roentgen's discovery five weeks after its European announcement. Both the *Pacific Commerical Advertiser* and *Hawaiian Gazette* published somewhat breathless news items on February 11 (both misspelling Roentgen's name), followed a week later by a story in the *Bulletin*. The *Advertiser* ran a follow-up on February 14.[37-40]

Islanders had their first opportunity to see the x-ray in action on September 8, 1896, when Dr Lauschner, acting surgeon of the *SS Australia*, gave a demonstration before some 75 invited guests in Pauahi Hall, Punahou. As part of his lecture, Dr Lauschner exhibited x-ray plates he had made, and concluded his presentation by projecting first his hand and then a coin-filled purse on a fluoroscopic screen.[41]

The first institution in Hawaii with an x-ray machine was the Honolulu Sanitarium, opened at 1082 South King Street in July 1896. An account published in 1899 noted that "A fine S[t]atic electrical machine, with an x-ray attachment, is in operation, and is for the use of physicians, and for giving special electrical treatment." The Honolulu Sanitarium, a branch of the fashionable Battle Creek Sanitarium headed by J.H. Kellogg MD was meant to serve "tourists and others wishing an invigorating or tonic treatment" and "curable patients who need special or ordinary care."[42]

Acceptance of the new technique among the more established hospitals in Honolulu was reached more slowly. The earliest known reference to x-rays in the surgical records of The Queen's Medical Center describes a radiograph of the fractured leg of G.W. Kirkaldy, admitted September 6, 1904 and attended by Dr Hoffmann. Not until 1911, however, did The Queen's Hospital install its own x-ray apparatus. Leahi Home, the hospital for tuberculosis patients founded in 1900, purchased its first x-ray equipment in 1916.[43-45]

Antibiotics

The first of the major antibiotics was penicillin, identified by Sir Alexander Fleming in August or September 1928 and described by him in a paper published in 1929. Demonstrated in 1940 to have therapeutic powers, it received its first clinical trials in February 1941. Production remained inadequate until 1944, however.[46-47]

Sulfanilamide, while not actually an antibiotic, was viewed as the first of the so-called *miracle drugs*. Discovered (as a dye) in 1908, it was found in 1932 to have useful medical properties. Beginning in 1935, it became an extremely popular drug, often applied indiscriminately and sometimes recklessly for a wide variety of conditions.[48-50]

Sulfanilimide was first used locally in 1937 by Board of Health, Queen's Hospital, and Navy physicians, primarily in the treatment of gonorrhea. Four years later, on December 7, 1941, many U.S. service personnel seriously wounded in Japan's attack on Pearl Harbor were reportedly saved by sulfanilimide in what was described as its "first big wartime test."[51-55]

Penicillin reached Hawaii in 1943 but was initially restricted to military personnel. The first Island use of this antibiotic appears to have been at Aiea Naval Hospital, where it was applied with great success in the treatment of gonorrhea, beginning in July 1943. Early in October, officials decided to undertake the production of penicillin locally at the HSPA Experiment Station on Keeaumoku Street. Soon the HSPA technicians developed a new method which produced penicillin solution in quantity in half the time required by the complex 10-day process used for preparing pure penicillin. This output went largely to the plantation hospitals.[56-60]

Penicillin was first made generally available for civilian use in June 1944, with designation of The Queen's Hospital as the distributing center of the drug for civilian purposes throughout the territory. A few months later, Dr Nils Larsen described the treatment of some local cases. Between July 1944 and March 15, 1945, 1,049 patients received 774.8 million units under this program.[61-66]

Streptomycin was first isolated in 1943 and announced in medical journals early in 1946. Although limited supplies of the drug began to reach Hawaii soon afterward, the first large commercial shipment was not received until November 1946. In December, physicians at Leahi Hospital began using streptomycin on tuberculosis patients.[67-70]

Are We Laggards?

Just how far behind the times has Island medicine lagged? The foregoing paragraphs have reviewed the evidence for five major advances: Vaccination, anesthesia, antiseptic and aseptic surgery, x-rays, and antibiotics.

The record is admittedly mixed. In vaccination against smallpox, Hawaii's physicians proved themselves not only slow but ineffective: their best efforts could not prevent the catastrophic mortality recorded in the 1853 epidemic. Anesthesia, in contrast, reached Hawaii in a relatively short time, taking available transportation into account. Antiseptic surgery and the germ theory of disease were long resisted by the American medical establishment, and Island physicians and surgeons were probably more progressive in this area than many of their Mainland counterparts. X-ray technology, although demonstrated to Island residents within eight months of Roentgen's announcement, was relatively slow to achieve widespread adoption. Penicillin, in contrast, was quickly accepted, with Hawaii well ahead of many Mainland areas—a result of both the Islands' military importance and HSPA's initiative.[71]

The advances traced here are but a limited sample of medical innovations over the years, and in any event all of those cited date back a half century or more. A fair accounting of Hawaii's responses to progress, complete to the 1990s, would obviously require a full volume.

Hawaii in past years has not always been in the forefront of medical progress. But it has hardly deserved the intimations of medical backwardness sometimes expressed by out-of-state commentators.

One telling set of statistics: Before 1950, expectation of life at birth was lower in Hawaii than on the Mainland, but since 1950 it has exceeded the national average. Since 1970, moreover, it has been the highest of any of the 50 states.[72-73]

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Palama Settlement: 100 Years of Serving a Neighborhood's Needs

Paula Rath

The founding of Palama Settlement brought to those who might not be able to afford it public health nurses for maternal care and nutrition, well-baby clinics, tuberculosis clinics, medical and dental clinics, and eventually major support of medical needs during and after the attack on Pearl Harbor. Palama Settlement celebrates its centennial year with many of its early functions assumed by state and private organizations, but it is prepared to enter the next 100 years of service to the community. Palama was founded by James Arthur Rath with the purpose of serving the community; many people today remember their childhood and Palama Settlement.

Settlement Movement—Palama Settlement

A settlement is established to identify and meet the needs of its community. The settlement movement began in England during the 1880s when Samuel Barnett, the vicar of Saint Jude's Parish in London, invited university students to *settle* and share in the life of the people of a deprived area.[1] The aim of the settlement program has remained the same for more than 100 years: to enable social workers, health care providers, and community leaders to gain an understanding of the conditions under which the people in a given geographical neighborhood lived—and to enlist the aid of the more fortunate to improve these conditions. One of the unique factors in the settlement approach to meeting human needs is that the social workers move into the area and live side by side with the people, enabling them to learn firsthand what the needs are.

Today in the United States there are only a handful of settlements still in existence; Honolulu is fortunate to have one of them—Palama Settlement. For 100 years Palama Settlement has served as an outstanding example of how a settlement can serve its community. Its programs are constantly growing and changing with the needs and conditions of the people in Kalihi-Palama. Throughout the years it has served all age groups, crossing lines of race, religion, national origin, and economic status.

Meeting the medical needs of this ever-changing neighborhood has often been a primary focus for Palama Settlement. On the eve of this centennial, it is appropriate to look back at just a few of the medical programs provided at this key community center during its first 100 years.

A Brief Overview

In a 1941 *Journal of the American Medical Association*, Philip S. Platt noted in an article titled "Honolulu's Hull House," that Palama Settlement pioneered numerous farsighted and important health programs in Hawaii, including:

- Public health nursing in Hawaii
- Prenatal clinics and child health expositions
- Day camps to teach health, hygiene, and stress management
- Milk stations
- Tuberculosis committees
- Branch dispensaries
- Courses in public health at the University of Hawaii

Platt wrote:

> During the 45 years of its existence Palama Settlement has seen Honolulu grow from a sprawling village of 30,000 to a metropolis of 200,000. Untold thousands of citizens scattered through the city and its principal islands have spent their youth under the helpful guidance of Palama.[2]

Public Health Nursing

James Arthur Rath was a social worker who was born and raised in Hyderabad, India, the son of a British physician who was a civil servant. The YMCA of India sent him to Springfield College in Massachusetts, then a training institute for future YMCA workers. While there, he was recruited by Mr P.C. Jones of the Hawaii Evangelical Association to come to the island of Oahu to form a settlement from what was then Palama Chapel. At that time, in 1905, Palama Chapel was still a religious organization reaching out to its community. However, Jones and other Chapel board members recognized that the needs of the neighborhood were far greater than what they could provide. So, in keeping with the international settlement movement, Rath and his Massachusetts schoolteacher wife, Ragna Helsher Rath, moved into the Palama neighborhood.



Circa 1930, Palama Settlement Public Helath nurses working in the community.

As a trained social worker, Rath quickly completed a survey of Kalihi Palama's needs and established Palama Settlement with the help and support of Central Union Church and many of Honolulu's prominent, socially conscious families such as the Castles, Dillinghams, Lowreys, Baldwins, and Galts. On July 21, 1910, a charter was signed by the Territory to create Palama Settlement as an eleemosynary organization under a volunteer board, with the

executive director (Rath) working under the Board of Directors.

Among the first needs identified by the community survey were health and hygiene. Palama had a serious tuberculosis problem, as well as venereal disease and unacceptable sanitation conditions in the tenements where the majority of Palama people lived. In addition there was a dearth of dental care, prenatal care, and a lack of education regarding health and hygiene.

Therefore, Rath, in 1906, worked with the Free Kindergarten Association of Hawaii (now KCCA, marking its 100th anniversary in 1995) to provide a public health nurse for home nursing among the poor. This was quickly followed by establishment of a milk depot at Palama to dispense free milk to needy infants. In 1908, an executive nurse and several more field nurses were added to the Palama Settlement staff on a full-time basis. By 1910 there were 10 nurses: two doing tuberculosis work and eight making weekly visits to each public school plus continuing their home visits and working at four free dispensaries where they provided first-aid and follow-up treatments. During these early years there were no physicians on the Settlement staff. The dispensaries were tents with wooden floors where nurses provided basic first-aid and a plethora of health education. From 1910, however, physicians generously volunteered their time at the dispensaries, screening and treating patients from many of Oahu's poor neighborhoods.

In 1914, with guidance from Arthur F. Jackson MD and assistance from W. Dunn MD, Palama introduced a "Mother's Rest Camp" at Kaipapau, near Waialua Beach, adjacent to the home of W.D. Baldwin MD. Here, exhausted mothers could come for a week or two of rest while a nurse taught them and their children nutrition, hygiene, laundry, and cooking. It was also in 1914 that Dr Jackson began to see patients in Palama's outpatient clinic three days a week.

One of the most famous names affiliated with Palama Settlement is that of Mabel Smyth, who was Public Health head nurse from 1919 to 1928. A part-Hawaiian woman who grew up in Palama, Smyth's strength, intelligence and abilities were recognized by Rath, who sent her to Boston for special training in public health nursing. While there she learned all the latest public health skills and techniques and brought them back with her to her Palama neighbors.

In 1923, under Smyth's leadership, the nurses at Palama began child health work, first through well-baby clinics, followed by obstetrical clinics. Public health nursing was centered in Palama Settlement for more than 20 years, after which it came under the Board of Health.

Outpatient Clinics Provided as a Gap Measure

Each decade presented a new, unmet need for Palama Settlement. From 1910 to 1923 all of the city's tuberculosis clinics were held there. In 1925, Palama's clinics were available for needy neighborhoods throughout Oahu: Beretania, Kalihi, Kauluwela, Punchbowl, Kakaako, Castle Kindergarten, Moiliili, Waikiki, St Mark's Mission, Iwilei and Palama.

In its Report to the Community in 1929, the Palama Settlement Board, chaired by John R. Galt, reported some remarkable health-related statistics. Among them:

- Palama physicians and nurses cared for 12,000 families (23,744 patients).
- 20 public health nurses cared for and taught mothers and children.
- An average of 50 patients were seen by two volunteer physicians each morning.
- Palama provided specialty clinics in cardiology, dermatology, orthopedics, obstetrics, eye, ear nose and throat, dental care and venereal disease (more than 11,000 outpatient visits for specialty care).
- 12 weekly baby and preschool conferences were held.
- Preventive dental care for 2,500 first graders was provided.

More than 30 Honolulu physicians volunteered their time and talents to provide this extraordinary measure of care to the people of this deprived neighborhood. A partial list of prominent physicians who provided medical and specialty care during the late 1920s includes: M.A. Cassidy, J.W. Lam, D.B. Bell, E.M. Howarth, R.E. Cloward, J.A. Morgan, N.P. Larsen, H.L. Arnold, F.L. Putman, A.L. Craig, D.L. Withington, R.B. Faus, E. Leong, W.C. Barger, M.H. Mack, I.K. Cummings, C.F. Reppun, J. Kuninobu, G. Straub, and J. Saunders.

In July of 1947, the *Honolulu Advertiser* editorial page praised Palama's role in providing decades of needed medical care to the people of the city and county on the eve of St Francis and Queen's Hospitals opening their own outpatient clinics:

> Palama has, over the years, served well the community in a field of activity never intended as its primary function...Palama is to be congratulated for having contributed so abundantly to a program of better medical care for the indigent sick of our county. Well done, Palama![3]

Palama Settlement Meets Medical Needs in Time of War

Following the morning of December 7, 1941, Palama Settlement became a center of medical activity for the Honolulu County Medical Society. The society's Emergency Medical Preparedness Committee trained about 100 people, recruited largely from among the Settlement employees. The first civilian casualties were received at the Settlement on that fateful day. Palama was also thrust into 24-hour-a-day action as headquarters for one of three Air Raid Warden Zones, with the Settlement's director designated as the leader for the evacuation plans of the Mayor's Disaster Council.

In this former haven of peace and social activity, the staff now handed out gas masks, conducted fingerprinting, and issued passes. In a continued medical role, they also immunized the neighborhood against typhoid and smallpox. Meanwhile, the Fresh Air Camp and the Palama Gymnasium were leased to the Army.[4]

A Legacy of Caring

During the past 50 years Palama Settlement has grown and changed to meet the needs of the Kalihi-Palama Neighborhood. While many of the tasks taken on in the 20s, 30s, and 40s were subsequently adopted by the city and state organizations or by private or public clinics and hospitals, Palama continues to keep its finger on the pulse of the people. Though many of Palama's programs are currently in the areas of education and recreation, and socialization, the *mauka* Fresh Air Camp at Opaeula is still there for those who need it. The Strong-Carter Dental Clinic, after 75 years of service, closed its doors in March 1995.

One thing seems certain. As long as people live in Kalihi-Palama, Palama Settlement will be there to meet their needs, whatever they may be: medical, social, recreational, or educational. With the continued generous assistance of the medical community, the Settlement can look forward to another 100 years of service.

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Medical Society in the Early 1900s

Ann B. Catts MD

The Archives Section of the Hawaii Medical Library contains bound volumes of printed transactions of the Hawaii Territorial Medical Society Annual Meetings beginning in 1904, and minutes of the monthly meetings of the Society from December 2, 1905. During the monthly meetings, papers were read, cases presented, specimens shown, and business conducted. The latter often concerned problems or ideas that have continued to reappear and stimulate and/or frustrate members to this day.

In 1956 Dr Harry Arnold, Jr, wrote a comprehensive article in the *Hawaii Medical Journal* tracing the history of the medical society.[1] There is a gap of 34 years between the granting of the charter for a medical society and its initial meetings, and a revival of the society in 1892 when records show Dr John S. McGrew became president. There is no available record to explain why the organization discontinued for a number of years or why it was revived. However, a letter written to the Society in 1913 by Dr Robert P. Myer does give a very brief personal account. He writes of a reorganizing meeting of "all the Doctors of the Islands" at the Board of Health offices, and of a conversation the prior evening with Dr Armitage. Dr Myers says he told Dr Armitage what he planned to do the next day and that "the minutes will show Dr McGrew elected President...Howard, and he was elected VP and I, Secy." The letter does not give a date for this meeting, but it was either 1892 when Dr McGrew is first listed as president, or in 1895 when the officers elected are recorded as Dr McGrew, President; Dr H.W. Howard, Vice President; and Dr R.P. Myers, Secretary.

The monthly meetings were held in a doctor's office, usually that of the president. This was not entirely satisfactory as some members apparently did not attend if the meeting was held in certain doctors' offices. In his President's Address at the 13th Annual Meeting in 1904, Dr W.L. Moore said "... it seems proper to suggest that permanent quarters for the Society in Honolulu with the nucleus of a library, with a reading room and rooms for discussion are necessary." In the December 7,1907 minutes the Committee on Permanent Location reported "upon two locations and also on the whole question. It was moved and seconded that the house on Alakea Street be rented for $5 per month. At the January 4,1908 meeting the question was again discussed. It was thought "the extra subscription necessary to pay $5 per month as rental...would be very difficult to collect from the members." It was decided to notify the membership of the intention to have a permanent location with Dr Humphris a committee of one to "lay before them the advantages of such action." Dr Humphris reported back at the March 7,1908 meeting that "a circular letter was sent out and practically all replies were in favor of permanent location." The report was received and the committee discharged. The Committee on Permanent Housing reported progress in May of 1908. However, whatever progress was being made, the attempt to find permanent housing is not brought up again in the minutes for another six years. The meetings continued to be held in doctor's offices or in the offices of the Board of Health. Later the University Club became the site of the meetings and was used in 1914 and 1915. However, in the minutes of December 4,1914, Dr Cooper "considers that the Society should have some regular meeting place and not be dependent upon the generosity of the University Club and states that he believes that sufficient room can be obtained in the Bungalow which should also serve as a nucleus for the establishment of a library and a medical club." A committee was appointed to investigate the possibility of such an arrangement, and letters between the medical society, Governor Lucius E. Pinkham, and the superintendent of Public Works followed. The superintendent, Charles R. Forbes, wrote to Dr Cooper that he found the premises to be filthy and in bad repair. He directed that the "quarters, as selected by you, be cleaned, and I am asking for a figure for the repapering of two rooms and a hall." At the January 8,1915 monthly meeting, Dr Cooper, as chair of the Housing Committee, reported he had been able to obtain two rooms in the Bungalow and that they were freshly painted and repapered. The February 5,1915 meeting was held in the quarters of the Society, the Bungalow Building. Unfortunately, this did not prove to be a permanent location. There was a problem of setting up telephone communications for the Bungalow. In the December 3,1915 meeting, Dr Sinclair brought up the matter of the United Service Medical Society having used the rooms for its meetings without asking permission. At the January 7,1916 meeting at the University Club, it was learned that the acting superintendent of Public Works had given permission for the United Service Medical Society to meet in the rooms "on the assumption that the Territory had fitted up the rooms for the Medical Society." The House Committee was instructed to search for new quarters and it was suggested that they work in conjunction with the dental society. The following meeting (February 4,1916) the House Committee reported that the superintendent of Queen's Hospital "had offered a room at the Hospital to the medical and dental societies for their library and meetings." It was agreed to accept the offer. The March 3,1916 meeting was held in the *Medical Society Room* at the Queen's Hospital, and the Society continued to meet there at least into the 1920s.

Most of the monthly meetings were attended by 12 to 15 members in the early years of the century with a nucleus of about 10 members who attended most consistently. The difficulty of getting members to attend regularly was noted in several of the Presidents' Addresses at the Annual Meetings. In 1907, Dr A.G. Hodgins said, "It is surely not asking too much of any one of us to set aside just one evening a month for this Society as the greater number present, the more benefit we will receive from the excellent discussions which will ensue." Dr A.N. Sinclair, in 1908, said, "The meetings have been none too well attended...I am assured every member has the welfare of the Society at heart, but some are inclined to be apathetic, especially in regard to attending the monthly meetings. They rely upon others to make a good attendance. There is no greater mistake possible, if the Society is to prosper and succeed in its purposes."

Finally, in 1909 Dr J.R. Judd remarked, "It is a matter of regret that more members from the other islands do not find it possible to meet with us..."

The problem of Neighbor Island membership was addressed in June, 1911 when the following executive committee report is recorded:

> The executive committee of the Society [has] considered the question of County Societies and constitution and bylaws for the same and beg to recommend as follows: That the Hawaii Territorial Medical Society be continued along lines similar to present ones but that the constitution thereof be amended or redrafted to allow the organization of county societies throughout the Territory, said county societies to be entitled to representation in the Territorial Medical Society.

Although the changes were made as directed, it was a rather cumbersome arrangement and some years later, with advice from the AMA, the relationship of the county societies was better defined to conform with state societies on the Mainland.

The dues of the Society are mentioned in the minutes of December 1, 1906 in the form of the following motion: "that the annual dues of city members be $5 and those of members outside of Honolulu remain at $2 as heretofore." One month's notice had been given regarding this increase; the motion was carried unanimously.

From the earliest available minutes, it is evident that the Society was actively involved in introducing bills and monitoring legislation, usually through the Legislative Committee. In 1907 the Society had introduced a revision of the *Laws...Relating to the Practice of Medicine and Surgery*. A special meeting of the Society was held for the Legislative Committee to present the proposed bill to the members. A copy of the bill was sent to each member before the special meeting. The bill was introduced in the House by Representative Rawlins. Even then, however, it was not an automatic passage through the legislature, as evidenced by the remarks of A.G. Hodgins in his President's Address of 1907:

> When we endeavor to protect the public by better medical laws or by the prosecution of a quack, we are accused of selfish interests, but in the case of epidemics we have to bear the brunt of the battle in stamping out the disease and then we are humiliated beyond measure when we ask for any medical legislation...Our last Legislature took a different view of things when we presented a bill exactly like that of the state of California to regulate the practice of medicine.

In 1908 President A.N. Sinclair was moved to remark:

> ...I refer to the endeavors of this Society to perfect the laws regulating the practice of medicine in this Territory. In the past, our efforts in this direction have met with nothing but accusations of mercenary and other personal motives. The membership of the Society has been alluded to as *The Medical Trust*, and other terms...The legislature meets again this year. Let it be the aim of each one of us to accomplish the passage of the bill presented at the last session of the legislature.

Finally, in 1909 the chair of the Legislative Committee reported on the amendments to the medical law that had passed the Legislature, and he expressed satisfaction with the result.

The Society had an ongoing relationship with the Board of Health which varied in its strength depending on the president of the Board. The Board president was apparently invited to the monthly meetings but only Mssrs Pinkham and Mott-Smith were regular attendees and developed a good dialogue with Society members. It was advantageous for the Board of Health president to attend the meetings since discussions often involved public health issues. Mental health treatment and facilities engendered discussions that could come from today's newspapers. For example, at the monthly meeting held on February 2,1907, Dr Emerson presented a "scholarly report of the Committee on 'Committals to the Insane Asylum.'" Mr Pinkham was invited to remark after the presentation, and he said "the chief fault lay in the lack of funds to carry out the work... let anyone give the money and buildings, more commodious...would be quickly provided." In 1909 the members addressed the problem of the use of the term "Hawaiian fever" and passed a resolution to write to the Board of Health as follows: "Whereas the Hawaii Territorial Medical Society does not recognize the term Hawaiian fever, the Society would respectfully ask the (meaning) of said term as used in the Board of Health reports." The final resolution to the Board of Health also included a second part dealing with the control of typhoid. This portion of the resolution reads:

> Whereas, it is brought to the attention of the Board of Health through its agents, that in many outlying districts (in cases where the water supply is good) fly infection from dejecta of typhoid fever patients is the chief cause of typhoid fever, the Society wishes to put itself on record as being heartily in favor of the screening or flushing of closets, or some other method of minimizing this source of infection.

The Board of Health replied in a letter dated April 13,1909:

> Relative to your letter of February 1, 1909, which was presented at a meeting of the Board of Health held February 24, 1909, and referred to a special committee...we beg to submit the following facts: The acceptance of the term Hawaiian fever was handed down to the present Board, and we fully realize the term is far from being a technical one. We, therefore, intend recommending that physicians be notified that the term Hawaiian Fever will not be further accepted as a cause of death; will further recommend that the disease hereafter be recorded as *Para-typhoid*, provided all clinical evidence show such to be the case...

The Board then stated that the medical society is the body that should classify the disease and that "we would respectfully suggest that the Society investigate and properly classify this disease."

Dr Sinclair was appointed chair of the committee to investigate Hawaiian fever and recommended that a letter be sent to all physicians on the Islands requesting their experience and judgment in the matter. At the next meeting (July 10,1909), Dr Sinclair reported on the results of the responses and that the answers formed the basis for the committee's recommendation:

> That Hawaiian fever, or a febrile condition peculiar to Hawaii does not exist.
>
> That the only definite febrile condition is that of simple continued fever, common all over the world and never fatal.
>
> That no death certificate signifying that the death was due to HF should be accepted by registrars. But this committee disapproves of every death resulting from an indefinite fever (or imputatiously HF) being necessarily reported as paratyphoid. This committee believes that every physician should be allowed the liberty of exercising his judgment to its full extent.

The report of the committee was accepted and a letter sent to the Board of Health.

The Society would regularly attempt to convince the Governor to appoint a physician as president of the Board of Health whenever the position became vacant, but with apparently limited success.

There is evidence the Society disciplined members: the most striking case being that of Dr J. Chris O'Day. The minutes of May 2,1908 list a Dr O'Day of Oil City, Pennsylvania in attendance. Dr O'Day made some flattering remarks about Dr Judd who had operated on his daughter for appendicitis and said that there was no truth to the report that he was leaving because Queen's Hospital would not allow him to treat ward patients. He was leaving because he was homesick. Dr O'Day was present at the Annual Meeting in

November 1908 as an invited guest. At that time, he was proposed for membership and after credential review he was elected a member at the December 5, 1908 meeting. During the next meeting, Dr O'Day gave an "exceedingly interesting and much instructive paper on gastric ulcer" and engendered a lively discussion by the members. The difficulty arose in November 1909 and there followed many references to Dr O'Day over the next several years, often with little detail as to why he was expelled from the Society. However, a complete summary is provided in a four-page letter to the Society by Dr A.N. Sinclair on April 2,1920 after he had met with the secretary of the AMA about the case. The following excerpts are from that letter:

> ...in November 1909, Dr O'Day was responsible for a newspaper article in which it was charged that, in effect, property owners, particularly Hawaiians, were frequently railroaded to Molokai unjustifiably, as lepers, by the medical men of Hawaii, acting at the behest of the plantation interests, who thereby secured the property for their own use.

The matter was brought before the medical society in the form of charges in early 1910, and Dr O'Day was asked to appear before the Executive Committee to respond. He refused to do so. Dr O'Day was expelled from the Society on February 5,1910 after refusing repeated opportunities to meet with the members.

> Dr O'Day soon after went to Portland, Oregon still under the ban of expulsion from the Medical Society of Hawaii, and that he was there made a member of the Portland Society, in contravention of the laws regulating membership in such Societies, as laid down by the American Medical Association–and this although the Secretary of the AMA had been notified of the expulsion...

Dr O'Day returned to the islands in 1917 and applied for membership in the Society by transfer from the Portland Society. The transfer was refused on the grounds that his membership in the Portland Society was illegal. The Hawaii Medical Society maintained that Dr O'Day "...could only regain his membership...in one of two ways. First: By admitting the truth of the charges made against him in 1910, making a public retraction thereof...Second: By requesting a reopening of his case, and fighting the charges to their ultimate conclusion." Another problem—the minutes of the meeting when Dr O'Day was expelled were lost and the AMA advised Dr Sinclair to have an official amendment to the minutes passed in which the expulsion is clearly stated. This was done and sent to the Judicial Council of the AMA. The members of the Society said beyond the specific charges against Dr O'Day, the case was vital to the AMA and the constituent societies because of the action of the Portland Society in accepting Dr O'Day for membership when he had been expelled from the Hawaii Medical Society. A report back to the Medical Society regarding the decision of the Judicial Council has not been located. At the May 4,1917 meeting a very heated discussion had occurred, as noted in the minutes, over the fact that Queen's Hospital had granted Dr O'Day privileges. The discussion included comments regarding the role of the hospital staff in approving members (no one from the hospital staff had been present at the Trustees' meeting). Some believed a physician needed to be a member of the medical society, as well as being licensed, before being considered for staff privileges. Others warned against insulting the Trustees of the hospital and also against making the complaint too personal.

> A motion was made by Dr Judd that a suitable resolution be made expressing the sentiment of the Society on the matter and at the same time the Trustees be notified that a committee from the Society would be pleased to meet the Trustees at their pleasure.

A committee was then appointed. There is no immediate follow-up to this action found in the minutes.

The meetings were not all business; papers were read by members who were often assigned to do so at the previous meeting, clinical reports were given, including showing specimens from cases. There was an emphasis on communicable diseases, especially tuberculosis and leprosy, although surgical topics and other medical problems were also well-represented. At the meeting of August 3, 1907 Dr Brinckerhoff gave a "most interesting talk on 'The Statistics of Leprosy in the Hawaiian Islands.' " He stated that the records "dated back to 1866, since when there have been 5,385 cases segregated and sent to the settlement. The average number of cases apprehended seems to be about 100 a year, although it was as low as 27 in one year. The disease appears in the child and young adult, and was generally of about four years duration, before they were sent to Molokai..." One of the cases presented at the May 1, 1909 meeting was by Dr Moore who reported the case of a child "that had a swelling about McBurney's point." At surgery "about a pint of pus" was evacuated which was thought to come from the appendix; "Later noted curvature of spine and symptoms of Pott's disease." The social standards of the time are reflected in the report of a case by Dr Judd at the July 7,1906 meeting: "He (Dr Judd) also showed an abdominal tumor which had been removed from a woman after a diagnosis of fibroid tumor, and hysterectomy performed." The following sentence was then crossed out: "The woman's husband had been dead 12 years, but the uterus tumor contained a foetus." The revised minutes continue: "The fibroid uterus contained a foetus of about the 10th week—the history of the case pointed to its having been there 12 years."

Physician visitors from the Mainland were always asked to give a few remarks and occasionally were the main speakers. New techniques and equipment were presented when possible. Dr Lehman of San Francisco made some "interesting remarks on the therapeutic value of the x-rays" at the September 1, 1906 meeting. The minutes then describe in some length the use of x-rays for leukemia, skin diseases, and internal organs. During the meeting of July 11,1908:

> Dr Humphris read a paper on 'Blood Pressure' and gave demonstrations of the Riva-Rocci Sygmomanometer [sphygmomanometer]. The value of estimating blood pressure in regard to diagnosis and prognosis in syphilis of the brain, eclampsia, cerebral haemmorrhage, arteriosclerosis, etc, was brought out. As altered blood pressure may assist(?) if not be a cause of insanity, the importance of its estimation is apparent. By the use of the instrument the blood pressure may be regulated in a scientific way.

They then proceeded to demonstrate on some of the members with the following results: "Dr C.T. Rodgers showed a good pressure; Dr Hodgins normal; Dr Augur who showed the influence of a vegetarian diet; and Dr Straub who showed an excess." Whenever the members traveled they would report to the membership when they returned to the islands. The resulting talks were both medically oriented and also more personal in nature. In 1907 Dr Cofer journeyed to Central America and gave a relatively comprehensive report on the control of yellow fever, plague, and other quaratinable diseases. He reminded the Hawaii physicians that the islands had to stay alert for the possible introduction of these diseases by ships from those areas. "The quarantine and disinfection of ships from there may not be necessary for 30 times; but the thirty-first ship might introduce infection." He reported an interesting method of clearing a room of plague-infected fleas: "The best way to disinfect a plague room, is to turn a lot of clean guinea pigs into the room. The fleas will lodge on the guinea pigs, and the pigs are then chloro-

formed and burned." The annual meeting transactions included some papers presented during the monthly meetings of that year and deemed by the members to be significant enough to warrant publishing for all the members.

The social standards of the time can be appreciated by the Resolutions of Condolence that were drawn up by specially appointed committees at the time of deaths of members or someone in their families. It can also be seen in the language used by Dr Humphris in his letter of resignation as President of the Society :

> It is with extreme regret that I beg to tender my resignation as President of the Society. Nothing but my absence from the Territory for a very extended period...would cause me to resign from the office to which, through the courtesy of the Society, I was so recently elected. My relations with the Society have ever been of so cordial a nature and my sense of gratification at the honor of the position I am now resigning so extreme that nothing but singleminded sorrow accompanies this resignation...

The overall impression of the members of the Hawaii Territorial Medical Society in the early years of this century is that of sincere, conscientious, and dedicated medical professionals who were well-educated and up-to-date. They enjoyed medical practice and a strong obligation to protect the lives of the citizens of the Territory. That they were not always as successful as they would have wished when dealing with the legislature and newspapers should reassure our contemporary members and officers that the present difficulties have been shared in principle, if not in substance, with those who have preceded them. It also should give a glimpse into the future for the next century: the subject of the problems may change, but the source of conflicts and frustrations will probably continue to be very similar.

The physicians practicing in the Territory in the early 1900s believed they were unique in some ways as expressed by Dr W.L. Moore in his President's Address of 1904 :

> Hawaii, situated in the midst of the great North Pacific Ocean, is not only the crossroads of the Pacific, but it constitutes the extreme frontier of Western civilization, and for this reason great responsibilities devolve upon us scarcely equalled, and not excelled, in any other locality.

The present members of the Hawaii Medical Association can be proud of the work of those early physicians and of the medical society they nurtured and supported.

References

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Historical Notes

by John A. Breinich

This special issue of the *Journal* demonstrates the rich history of Hawaii medicine. Hawaii Medical Library is dedicated to collecting and preserving our medical history and the Archives section of the library has significant collections used by researchers, historians, and anyone looking for information in our unique subject area. The photograph collection has more than 5,000 photos individually cataloged and maintained in acid-free storage envelopes. The basis of this collection comes from the Hawaii Medical Association file of photographs of past and present members, but we are always looking for additions to the collection. The medical instruments collection has been donated by physicians, hospitals, and family members and incudes interesting historical instruments from around the world. This collection is currently being cataloged and limited preservation work is being done as funds permit. We are hoping someday to have a medical museum and this growing collection will then be more fully displayed and available for researchers.

Personal papers are another valuable part of the Archives collection. We have the past minutes of the Hawaii Medical Association and are in the process of transcribing the early minutes from 1904 to 1930 for easier use and electronic access. Personal papers, memoirs, and unpublished materials from

➤ *Continued on Page 784*



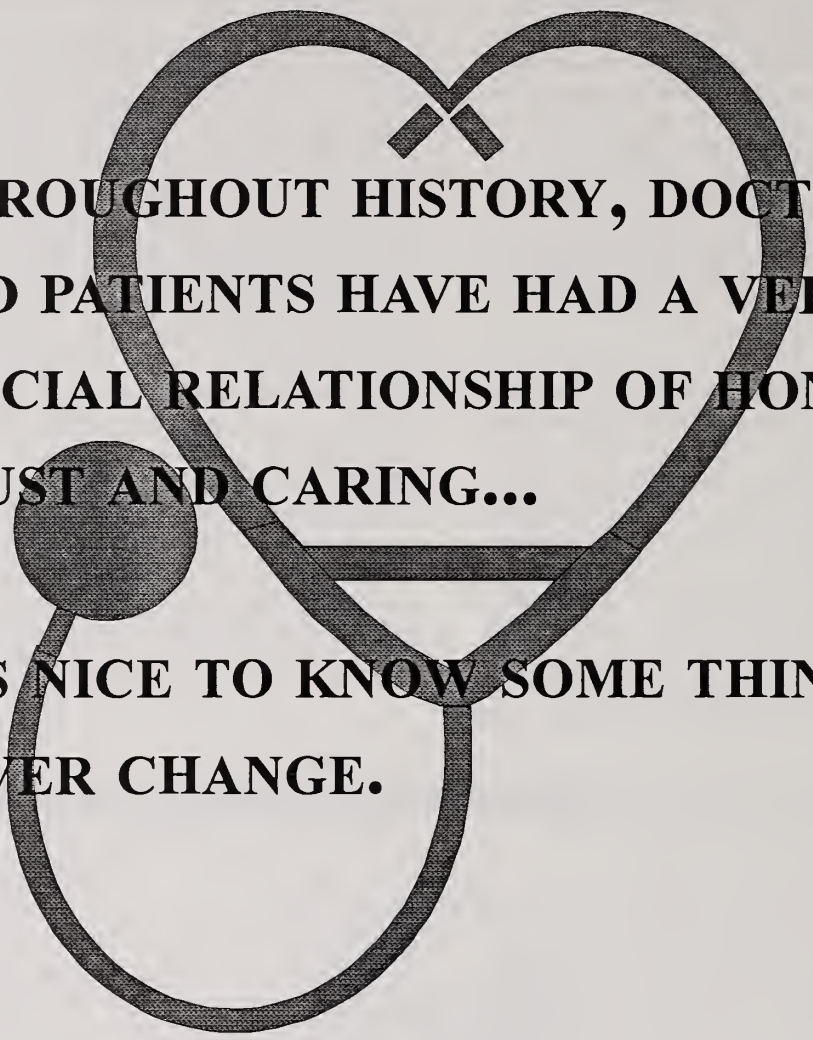
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The Epidemic that Never Was: Yellow Fever in Hawaii

Alfred D. Morris MD

The Kingdom of Hawaii suffered a disastrous series of epidemics starting from the first contact with Captain Cook's crew and continuing to the present. Despite the huge volume of shipping to and through Hawaii, one plague failed to appear. Yellow Jack (yellow fever) engendered more fear in sailors of the 19th century than any other disease. By 1910 the details of transmission were well-known and Hawaii met all the requirements for an epidemic. On October 30, 1910, the first case of shipboard yellow fever arrived at Honolulu but quarantine averted the threat. On October 28, 1911, a Hawaiian man, employed as a quarantine guard, was reported to have yellow fever and efforts were initiated to control a possible epidemic. This was the only occurrence of yellow fever in Hawaii.

In 1911 Honolulu was a different place. The last decade of the 1800s had seen the overthrow of the monarchy, establishment of the Republic of Hawaii, and annexation of the Hawaiian Islands by the United States of America. Most everyone including the native Hawaiian population expected the Hawaiian race to disappear. At the same time the great powers of Europe and the U.S. were in an imperialistic mode spreading Western civilization, good and bad, around the globe. The changes in Hawaii were not sudden, of course, but had proceeded steadily for a century and a quarter. Despite the very large influence of the Europeans and Americans in the local political and business affairs of Hawaii, it was the push for control in the Pacific basin that made Hawaii a strategic prize important enough that the U.S. was willing to annex the territory of Hawaii. The U.S. had coveted and obtained the use of Pearl Harbor as a naval base a number of years before, but the Spanish-American war with its reach into the Philippines was the catalyst that finally brought the Hawaiian Islands into the American fold over considerable objection at home.

The Hawaii that Robert Louis Stevenson visited in 1893 (and complained about as being too modern) underwent a flood of changes before Jack London made his visit in 1915. Electricity, street cars, telephones, the transpacific cable, automobiles, the first airplane, production of movies, and dramatic economic activity following annexation highlighted the technological transformation of the islands. *Thrum's Annual* lists 1910 as a year of exceptional prosperity with a cash balance instead of the usual debt. Perhaps the appearance of Halley's Comet in that year had an influence, but 1911 was noted by *Thrum's Annual* as another year of marked prosperity notwithstanding conditions threatening the public health.

From a public health standpoint, Honolulu for years had been a disaster of major proportions. Eminent medical historian O.A. Bushnell has said it well:

> Honolulu in 1820 was an ugly, barren, hot, and feculent town, a straggle of grass huts and a very few stone or adobe houses. Its residents sweltered amid clouds of dust or skidded along in mud often ankle-deep...Foreigners might sweat and complain...[but were] too impatient for an early escape from this dismal port to care about beauty, or comfort, or civic pride. Natives, knowing nothing about towns in other parts of the world, thought that this was how all seaports must be...From the beginning Honolulu's residents seemed determined to earn for their town the name by which eventually it was known to sailors throughout the seven seas: The Cesspit of the Pacific.

The kingdom of Hawaii suffered a disastrous series of epidemics beginning with the first contact with Captain Cook's crew and continuing to the present. The reduction of the Native Hawaiian population was so severe and arguably so psychologically devastating that all hope was lost for the future of the race. Concomitantly, the vacuum was filled by all sorts of mariners, professional and indentured labor, as well as by religious and entrepreneurial opportunists. These travelers brought diseases to which the natives had had no exposure and thus *kanaka maoli* suffered dramatically severe consequences. The epidemics that rolled over the Sandwich Islands had indeed produced great concern for public health, producing such draconian measures as forced isolation of lepers on Molokai and the setting of sanitary fires to control bubonic plague. Those fires, burning out of control, destroyed 35 acres of Chinatown at an estimated cost of over $3 million. Quarantine and strict control of port access were the usual but mostly futile attempts to solve health problems.

Honolulu pilots were authorized to inquire about the health of passengers and crews, especially as to smallpox, as early as 1836. Laws passed in 1839 provided for vital statistics and quarantine regulations. The next year, reporting of certain diseases was required within 24 hours. The first Hawaii Board of Health (1850) was appointed just two years after the beginning of the public health movement in London. The first sanitary commission was appointed in 1862 followed by legislation for isolation of lepers in 1865. Although animosity raged between ship's crews and the missionary-influenced government over the availability of female companionship, it was not until 1892 that the Board of Health was placed in charge of prostitution.

The Holocaust of 1900, the Chinatown fire, brought concern for public safety to a new level. Victoria Hospital was established in Kakaako for the destitute whose houses had burned in the fire. In 1901 the Tuberculosis Home opened (the next year it was renamed Honolulu Home for Incurables and later, Leahi Hospital). After annexation (1898) the U.S. Public Health and Marine Hospital Service was in charge of inspection, diagnosis and quarantine of vessels arriving in Hawaiian waters. The Territorial Board of Health was responsible for measures ashore, answering to the legislature and the Territorial governor who in turn answered to the U.S. Department of the Interior. Correspondence and reports of the chief sanitary inspector during the year 1911 reveal detailed and lengthy studies of the rat control program initiated some 10 years earlier because of an epidemic of plague that affected most of the islands. In fact Kalihi Camp had been established for detention purposes

during the plague epidemic of 1899 to 1900.

But the biggest contribution to a healthy Honolulu was a safe water supply, a sewage system and garbage disposal, all of which were completed in the first decade of the 1900s. The census of pure Hawaiians, however, dropped from 29,799 in 1900 to 26,011 in 1910 but also showed the beginning of an upsurge in part-Hawaiians. The Board of Health and physicians of Honolulu made little progress in educating the populace in proper health practices until some of Honolulu's citizens joined in to convince the governor to appoint a Sanitary Commission, marking the acceptance by the Territorial government of responsibility for the public health. The sanitary campaign of 1911 included: enforcement of a law against bovine tuberculosis, introduction by the Dairymen's Association of the electrical treatment of milk (Goucher system, first of its kind west of the Mississippi), tracing an outbreak of cholera to a taro patch in Manoa, and evaluation of a few cases of smallpox in Puerto Ricans. A mass meeting of citizens declared themselves for a clean city and supported a bill for a Board of Health emergency fund. Governor Frear appointed the Sanitary Commission with George R. Carter, former governor, as its head to investigate and advise on the health conditions of the city. Sunday, July 24 was a *clean-up day*. All public offices and places of business closed to permit everyone's sharing in the work for the common good. The Sanitary Commission's extensive report of 1912 marked the beginning of modern public health in Hawaii.

Despite the huge volume of shipping to and through Hawaii and the devastation by diseases from the outside world, one plague had failed to appear. *Yellow Jack!* Perhaps no pestilence engendered more fear in the sailors of the 19th century than the dreaded yellow fever, present in certain notorious tropical ports of the New World. Other diseases produced more deaths and more sudden epidemics on shipboard but some aspects of Yellow Jack were particularly awesome. First it was unpredictable—no one knew just when or if it would attack. Direct contact with infected persons did not seem to be a prerequisite. Once it appeared on shipboard it struck sporadically and indiscriminately, occurring in individuals at random over periods of months at sea. The disease was highly lethal, with no procedures known that could control it.

Ports in the Caribbean, South America, and Central America were especially dangerous but, strangely, not so sometimes. Furthermore, American cities were not immune. In 1793 the city of Philadelphia, the most modern city in the U.S., was virtually wiped out. The epidemic of 1878 killed 5,000 people in Memphis, Tennessee and 30,000 were driven out of the stricken city. That same year's epidemic was estimated to have cost the country $100 million and New Orleans alone claimed a loss of $10 million. Despite the lack of evidence of effectiveness, the common practice was to burn any ship's cargo where yellow fever was on board; burn bedding, clothing and anything contaminated with the black vomit or blood of the victims.

In contrast to the local perception that only Hawaiians were struck down by epidemic diseases, it was known that Yellow Jack cared not a whit if its prey were white, black, brown, or yellow. The victim's only comfort was knowing that if he or she did survive he or she was immune for life. Thus the population of Hawaii, and anyone coming from the temperate zones of Europe, America, and Asia (which supplied the overwhelming mass of immigrants to Hawaii) were mostly susceptible to yellow fever.

As with all scientific progress, unraveling the mysteries of yellow fever was the work of many, building on the achievements of others. Although we think of Walter Reed of the U.S. Army as the one who conquered yellow fever, making possible the U.S. success in constructing the Panama Canal whereas the French had failed, it was Dr Carlos Finley, a Cuban physician in Havana, who handed to the American commission, headed by Dr Reed, a porcelain cup containing the eggs of *Culex* mosquitoes. Twenty years of work, unsubstantiated and mostly ignored, he bestowed on Reed on August 1, 1900. Finley, of course, was indebted to others who were pioneers in the fields of malarial and filarial parasites. The medical politics of the day was no less vicious than that surrounding the pursuit of the double helix and the discovery of the AIDS virus of more recent times. In spite of the congenial start, antagonism soon erupted over who should have the glory of discovery. To be fair, and perhaps romantic, we might call Finley the genius whose insight (guess?) came up with the correct answer, and he then passed on to Reed and Carrol the responsibility of supplying the proof and practical application of the new knowledge in control of yellow fever.

By 1910 the details of transmission of yellow fever, incubation in *Aedes aegypti* mosquitoes, and the potential for its establishment in a given locale were well-known. The modern view suggests that the organism was a native of West Africa and made its way to the New World after the advent of the slave trade. Nevertheless there was a delay in the appearance of yellow fever until the proper mosquito had been established in the Caribbean, Brazil, and Central America. The mosquito does not survive as a permanent resident unless the temperature remains above 72°F. It is domesticated in that it breeds only in artificial or protected containers such as water casks, cisterns, or perhaps pools trapped in leaves of plants. Hawaii met all the requirements including the presence of the *Aedes aegypti* mosquito, and it was prime territory for this Yellow Jack. Commercial trade routes brought many ships, U.S. and foreign, to Hawaii after having called in South America, the west coast of Central America and Mexico. The Panama Canal, opened August 15, 1915, exposed Hawaii to direct commerce from the Caribbean.

Dr J.S.B. Pratt, member of the Territorial Board of Health, undertook a six month working vacation in 1910 to study yellow fever and mosquito elimination methods in South America, Panama, and Mexico. That same year, considerable effort and attention was documented by official telegrams requesting clarification of the dangers and procedures to be followed with regard to yellow fever when ships arrived from the west coast of Central and South America. The replies from Washington were reassuring, noting that the ports of Santa Clara and Manzanilla had instituted strict fumigation measures and no cases had been detected in the last year. In fact, officials in Honolulu were quite worried that quarantine procedures were about to be relaxed. Indeed, on October 30, 1910 the first case of shipboard yellow fever arrived at Honolulu but quarantine averted the threat to the city (Report of the Governor of Hawaii to the Secretary of the Interior, 1911).

On October 21, 1911 the *Hong Kong Maru* bound for Yokohama carrying cargo from South America by way of Manzanilla, Mexico, put in for coal and supplies at Honolulu with a sickness on board. The sick passenger in steerage had boarded the vessel at Callao, Peru. The Japanese surgeon on board knew about the sick man but did not report it. The federal quarantine officer came upon the sick man during his inspection and called for help from more experienced doctors at the Quarantine Station. A diagnosis of yellow fever on shipboard was made, and oddly, it was aboard the same vessel that had brought the first case the year before. Quarantine guards were placed on board while the ship was thoroughly fumigated. Barges of coal were towed out to the ship and on return were also fumigated. The headline of the newspaper article that day asked: "NOW WILL CITIZENS MOVE? Beware of the Third Time Says Dr Ramus—City Must Be Mosquito Proofed" (*The Pacific Commercial Advertiser*, October 21, 1911).

The next event was more startling. Newspaper articles and the

Chief Sanitary Inspector's Report tell the story: A Hawaiian man was reported October 28, 1911 to have yellow fever. The diagnosis was made by Drs Ramus, Marshall, Currie, Hobdy, Pratt and Major Kennesly, the only doctors in the islands known to have had experience with yellow fever. The infected man was one of the quarantine guards placed on board during the fumigation of the *Hong Kong Maru.* He had become ill and left the ship without notification to return to his home at Kalihi Camp which by that time was no longer in use as a detention station. What remained of the camp were 40 shacks in three irregular rows in an area of 9 acres. This area and the inhabitants were placed in quarantine October 28. The patient was thought to have been sick for three days, the period of illness when the biting mosquito can acquire the virus. The incubation period in mosquitoes is approximately 7 to 12 days before it becomes infective for others. Therefore, it was calculated that at least a three or four day window of safety existed. In a circle 100 yards outside the infected camp, all the trees and shrubs were cut (starting outside and working inward) in order to remove any shade for the *Stegomia calopus* (*Aedes aegypti*), a day mosquito which has a short flight distance of 100 to 200 yards. Next, everyone's clothing was inspected in the sunlight and shaken to expel mosquitoes. Clothing, boxes, and containers were brushed and dusted. After this each person with his or her effects was passed through to a quarantine station to stay until he or she could find new living quarters. He or she could remain at the station if indigent. The station was established and the quarantine area was staffed by the U.S. Army as requested by the civilian committee, which was established to deal with the public during this crisis. It was believed that the military was the only organization capable of adequately performing this task. After depopulation all the trees were cut except for a few fruit trees which were completely trimmed of foliage, shrubbery, and weeds , working from outside to the center. Lean-tos and shacks were torn down, carted to the beach and burned. Fumigation of all houses was done with sulfur dioxide. Three hundred fifty people were treated, 38 houses were fumigated (three times at least 8 hours apart) and, for an area of one mile outside, a vigorous mosquito extermination program was instituted (Report of the President of the Board of Health of the Territory of Hawaii for the 12 months ended June 30, 1912).

The patient recovered quickly and no other cases developed. The city did not recover quite so easily. A very moving editorial had appeared in *The Pacific Commercial Advertiser* the day the *Hong Kong Maru* arrived and the passenger with yellow fever was found. The editor praised the personnel of the United States Marine Hospital Service for protesting and resisting the relaxation of quarantine procedures for ships leaving Latin American ports. In the words of the editorial, "The enemy is at our door, more merciless than an army before a besieged city...It is a well-known fact that it sometimes takes a lot to arouse public opinion and the best and only way is to set before the people, who will have to take action some time—either cleaning up the mosquito or burying their dead—the seriousness of the situation..." It was pointed out in the accompanying articles that it was just plain good luck that the ship did not enter the harbor with the disease undetected, but it was bad luck that a southerly breeze was blowing onshore from the ship's anchorage.

A week later when the diagnosis of yellow fever was made in the local man, a mass meeting of the citizens led to appointment of a commission for eradication of the mosquitoes that transmit the disease. Military cooperation was promised. A special session of the legislature was called and the whole community plunged into the task. Well, almost everyone. Another article in the paper dated November 1, says that every white man of prominence in the city was present at the citizens' meeting but not one citizen of Hawaiian or part-Hawaiian blood was to be found. Dr Currie of the U.S. Marine Hospital Service, who played a leading role in the New Orleans fight for self-preservation, was put in charge and something akin to martial law was established by the Board of Health. A list of 22 statements outlined what every citizen of Honolulu was to do to eliminate mosquitoes and their breeding places. It was thought that the only valuable plants that had to be destroyed were banana trees. Some people questioned the actions but, should the citizen not comply, then the authorities with the help of the National Guard would do the job for them. Deputy Sheriff Rose apparently resisted. He was given the choice of cutting his banana trees himself, using his firearm against the soldiers, or stepping aside and having the trees cut for him. In the latter cases he would end up in jail with the trees cut in any case and enduring the embarrassment of having broken the law he was sworn to uphold. The same treatment was to be meted out to Harry T. Mills of Kaimuki or any others who might follow their example. (Various articles in *The Pacific Commercial Advertiser,* October 21 to November 5, 1911.)

The annual report of the Board of Health for the year ending June 30, 1912, listed a grand total of 508,877 inspections of gutters, cesspools, privies, tin cans, pools, holes in trees, rice plantations, etc. Larvae were found in 20,529 of these. Legal notices served, 625; nuisances abated, 532; ditches dug, 50 miles. The report detailed the difficulties encountered when occasionally a citizen refused. The Attorney General's department was so crowded that prompt legal attention to these matters was not possible. The details of making a case were so subject to error that only a few came before the court, but in those cases a favorable decision was easily won. When citizens were served with a legal notice, they almost invariably corrected the matter complained of, but it appeared to be quite impossible to secure a uniform, automatic compliance with the law.

When the services of the military were no longer available, it became necessary to establish a permanent force of civilian inspectors. This was accomplished by February 1912. Eventually a force of 20 inspectors and 20 laborers was found to be sufficient for the entire city. The results were thought to be quite satisfactory. The day mosquito was reduced to negligible numbers and had disappeared completely in most parts of the city.

Some individuals sued for compensation for the loss of their property, mainly banana trees cut down.

From a distance in time of 90 years, it may be difficult to appreciate fully the fears of the Hawaiian community with regard to yellow fever. There were many *huikau* native Hawaiians and *little guy* provincials who perceived the threat as something big business, big government, and the haole were concerned with. But the governments of the Pacific Rim and the subcontinent of India at the turn of the century were not in this state of mind. They were intimately acquainted with the scourge of malaria, filariasis, cholera, plague and were nearly hysterical that yellow fever, never seen in their regions, would have a direct and free passage by way of the Panama Canal to the Pacific and Indian Oceans. The Rockefeller Foundation, organized in 1913 for "the well-being of mankind throughout the world," created the International Health Commission of the Foundation with Wickliffe Rose as its director. That winter Mr Rose went abroad to discuss with health officials a possible program for the newly created commission. He found great concern throughout the East regarding yellow fever. Dr S.P. James of the Indian Medical Service called for a permanent quarantine force in Panama, Hong Kong, or Singapore to be maintained at the expense of the English colonies in the East. He recommended a systematic attack on the mosquitoes. Sanitarians recognized that once yellow fever was introduced into the Orient, with its dense population of nonimmunes, incalculable damage would accrue. The

Foundation sought and obtained the service of Major General William Crawford Gorgas, Surgeon General of the United States Army. He had effected the eradication of yellow fever from Havana and the Panama Canal Zone, and now was more than eager to extend his efforts as director of the Yellow Fever Commission of the Foundation.

To date no other occurrence of yellow fever in the Pacific beyond the coasts of Latin America has been found. By definition there was an epidemic of yellow fever in Hawaii in 1911. By skill, luck, and public concern, that epidemic consisted of only one case. Hawaii has much to be proud of in the management of the epidemic that never was.

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Acknowledgement

Dr Robert Worth, former Chief of Communicable Disease Division, Hawaii Department of Health called my attention to the report of yellow fever in Hawaii.

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Historical Notes

physicians in Hawaii are a valuable resource for historians. Individual accounts of past activities or developments in medicine are of great value because only a small amount of history is preserved in published accounts or materials. We welcome such materials and will work with individuals or families to determine what materials would be appropriate for the Archives.

The Auxiliary of HMA created a rich biographical resource of past physicians called In Memoriam —Doctors of Hawaii which tried to have information on every physician who practiced in Hawaii. The project ended more than 10 years ago, but this historical resource is still heavily used. To make this unique resource more accessible, we are putting the data base on the Internet on our Home Page.

The Hawaii Medical Library might be more known for the latest journals and resources for clinical medicine, but we are also working to preserve our medical history. We welcome donations to the collection including photographs relating to medicine, historical medical instruments, rare books, personal papers or memoirs on history of medicine in Hawaii, or you might like to volunteer to help work on these collections. Call the Library Archives section if you have any questions about the history of medicine.

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Plantation Medicine in Hawaii 1840 to 1964: A Patient's Perspective

Lela M. Goodell

The first contract laborers arrived from China in 1852, but little attention was paid to their medical needs. In 1886 a physician from Japan arrived to minister to the health and medical needs of the Japanese immigrants. After 1900 most physicians caring for immigrant plantation workers were Western trained from the Mainland. Many advances in medicine were started on plantations such as the second x-ray machine in Hawaii. The 1950s brought rapid changes in plantation medicine with the closing of plantation facilities on Oahu. The author describes her personal experience as a patient in the plantation medical system.

In high-rise-dominated, tourist-oriented Hawaii, it is sometimes hard to remember that only a little more than a generation ago these isles were dotted with more than 27 self-contained plantations with their own village life complete with housing, schools, stores, community centers, social workers, and medical facilities. The sugar plantations with related industry such as shipping dominated the economic life of the islands for nearly a hundred years. And from the blowing of the start-work whistle at 7 am to curfew at 9 pm, a person's personal life was dominated by the plantation.

Sugarcane grew wild in Hawaii before European contact and the existence of isolated stone-grinding mills is evidence of the manufacture of sugar by Chinese immigrants as early as 1800. The first sugar plantation organized after Western contact was on Kauai in the 1830s. It did not make a profit. Operation as a profitable industry had to wait until after the passage of the Reciprocity Treaty with the United States in 1876. The disastrously declining native population made the importation of foreign labor of upmost importance to the planters and forced the monarchy government to establish policies and practices regarding the treatment of immigrant laborers including providing for their health and medical care.

The first contract laborers from China arrived in 1852 and were distributed among the planters. They were called coolies, and if any attention were paid to their medical needs, documentation of it could not be found. An indication of their value to the planters can be ascertained by reading the shipping and passenger lists of interisland ships of that time. Haole passengers were listed first, by name, followed by:

5 natives
3 cows
4 Chinamen
6 head of hogs

In the early days of immigrant labor, the health and well-being of the imported contract laborers was a matter for the Bureau of Immigration for the Kingdom and later the Territory of Hawaii. An early immigrant ship with arriving Japanese landed in 1868; these people, however, were not laborers and most of them either continued to California or returned to Japan. A pioneer band of 180 Portuguese laborers arrived in 1878. The first large shiploads of Japanese contract laborers arrived in 1885.

In 1886 a physician from Japan arrived to minister to the health and medical needs of the Japanese immigrants. Japanese physicians were supplied before the turn of the century. After 1900 they were largely replaced with Western-trained, English-speaking physicians from the Mainland and a few from Europe. According to the agreement with the Japanese government, the Bureau was required to inspect the plantations every six months as to the quality of housing, food, clothing, and medical attention. Individual complaints could be made at the time of inspection. Early on, one plantation tried to deduct medical costs, but the Bureau of Immigration forbade it ruling that full wages must be paid and sick leave must be granted. Testimony indicates this latter policy was often ignored.

The earliest direct quote about plantation medicine came from a Chinese laborer interviewed in 1882:

> ...In their little two room house, which was all they were permitted in the early days, 12 children were born without a doctor in attendance. The husband always helped at the births, and three days later went to the plantation doctor to report the birth and get a certificate. It was considered a great shame to have a doctor at the time of birth. Also the plantation doctor lived far away and never came to people's homes...Conditions in general were much better for him in Hawaii than they would ever have been in China. He had never had regrets about moving here—most bosses were fair, and he doesn't think there is any place in the world like Hawaii. It gave the children a better chance than they would have had in China.

Turn-of-the-century plantation physicians, quoted 50 years later, had vivid memories of the difficulties of rural practice to match any from the horse-and-buggy period. Dr Fred Irwin who came to Hawaii in 1903 described his experience in the early 1950s:

> ...The hospital situation during the first three years of my practice on Hawaii could very easily be described because there were no hospitals. The three plantations for which I was physician and surgeon had no hospital, the same being true of the three plantations on either side of my district. The same was true of every other plantation and political district on the island of Hawaii up to as far as I can remember, about 1910 when a hospital was built at Pepeekeo for three plantations, Honomu, Pepeekeo and Onomea...

Dr L.L. Sexton reported from Hilo:

> In 1909, fresh from an internship at Queen's Hospital, and before I learned to speak or drink Scotch [most plantation managers on the Hamakua coast were Scotland born] this pioneering medicine was both an adventure and a challenge...My total lack of experience outside a hospital caused me no end of concern. Transportation was by horse and buggy over muddy, frequently impassable roads. The saddlebag filled with my total armamentarium was always ready in the buggy so that I could mount a mule for a trip into the foothills to see what? —a delivery, ruptured appendix, strangulated hernia, extraction of an aching tooth. Operation a must. How? Easy. A five

gallon oil can, build a fire; instruments sterilized. Local preparation—soap and water—old rags soaked in strong Lysol as drapes. Anesthetic—chloroform, easy to carry. Anesthetist—*mama-san*, trained on the spot by hand signals...We practiced early ambulation in those days. Manual extraction of a retained placenta, temperature 103°F. "*Hoe hana hana*" (Back to work) the next day, bowing and hissing her thanks as I passed by. Not my skill but the grace of God.

Plantation doctors were paid a salary called a retainer, and until the strike of 1946, these services were provided free to all plantation employees and their families. After the strike most perquisites were eliminated and the medical plans were negotiated by the International Longshoremen's and Warehousemen's Union (ILWU) and the Hawaiian Sugar Planters' Association (HSPA) on a plantation-to-plantation basis.

From my own experience with Kekaha Sugar Company on Kauai



A public health nurse attending a patient's foot while teaching other children.

in the mid 1950s where my husband was a *luna* (supervisor or manager), all medical needs were supplied by the plantation dispensary, which included the offices of two physicians, a 24-bed hospital, laboratory, and pharmacy. All this was free to management. According to the agreement, union members earning more than $100 a month must pay a small fee "not to exceed $5 a month," and will pay $1 for each house call and $2 if the call is made at night.

In my search for material about plantation medicine to supplement my own experience, all of the references agreed on one thing: the care and facilities varied widely. Some plantations had comfortable, well-equipped hospitals with the full-time attendance of physicians and a nursing staff, while a few more-isolated plantations, especially on the Big Island, had only a visiting physician and were 50 miles, over poor roads, to the nearest hospital. By 1910 there was a hospital on the Hamakua coast serving three plantations and boasting a full nursing staff. It was explained, to justify the need, that there was a hospital in Hilo but it was 50 miles away and was operated by the Territory. Whether the latter fact is a plus or minus is only inferred. There are many references to the language barrier as a limit to plantation medical practice after 1900 when the islands were organized as a territory of the U.S. following annexation in 1898. By this time the Japanese laborers had been followed by smaller numbers of Spanish, Germans, and Swedes, and after 1900, Koreans and Filipinos.

That plantation medicine was avanced in general may be indicated by the introduction of the x-ray machine. In 1904 Dr Robert Dingar of Puunene, Maui, received one as a gift from Mrs Martha Cooke Alexander, the widow of Samuel Alexander (1836-1904) who, along with Henry P. Baldwin (1842-1911), established the enduring plantation and business firm of Alexander & Baldwin. It wasn't until two years later that Palama Settlement in Honolulu started to use x-rays, and in 1911 the practice was introduced at Queen's Hospital.

Much of the background information for this essay was gleaned from the pages of the periodical publication *Plantation Health*, published by HSPA from July 1936 to April 1964. The first issue reported 29 doctors in plantation work, 18 plantation hospitals, seven smaller receiving hospitals, and three county or territorial facilities serving plantations.

The range of topics covered in *Plantation Health* is indeed vast, mentioning nearly every aspect of daily life for sugar workers from prenatal care to death. This publication was edited by Dr Nils Larsen and later by Dr Howard Liljestrand, with contributing editors from Maui, Kauai, Molokai, and the Big Island. In addition to technical articles on medical and surgery procedure, topics covered included rats, fleas, alcoholism, family planning, dental health, national meetings and conferences, travel, arsenic poisoning, and many others. A 1954 article was entitled, "Why Women become Nervous."

A 1940 article gives impressive statistics to illustrate the situation of the overworked plantation doctors. In 1951 one reported seeing 700 patients a month or 28 per working day. This, however, brought a rebuttal from a doctor at Olaa (Puna Sugar) who explained why he did not think having an assistant would improve medical services on his plantation. Although 90 patients a day were reported, he says: "...only about 40 are seen by the doctor, most are follow-up visits for injections or medications. Of the remaining 40 seen, about 30 will have colds or minor complaints...plus having a very efficient staff." He finished by observing that if he needed anything in the way of assistance, it was a Filipino interpreter.

A 1951 article on alcoholism observes that it does not seem to be a problem among the workers, but one writer (unidentified) cites: "...[the] sad tragedy of 14 doctors gone completely to pieces on alcohol...some were plantation doctors." My own observation would be that problems with alcohol were more of a concern with the managers than with the physicians or workers.

At Kekaha Drs Bert Wade and Marvin Brennecke took turns with the weekend duty so there was always one on-call. I remember attending a manager's cocktail party where both were present and it was explained, "Dr Wade can't have anything [to drink] because he has the duty this weekend."

Many plantation doctors had second houses on other parts of the islands for brief getaway relief. Dr Brennecke had a beach house at Poipu, halfway round the island, where he entertained frequently including annual Hawaiian Association of Plantation Physicians (HAPP) conferences. Although the house blew away in a hurricane, the area is still referred to as *Brennecke Beach*. As with all managers, doctors took a three or four month leave every three years when an intern or visiting doctor filled in. If a specialist was required and not available on a visiting basis, the patient was sent directly to Queen's by plane with a plantation nurse in attendance, if needed.

No doubt daily life for plantation physicians was at times lonely and isolated, especially on the Neighbor Islands. Dr Brennecke, on Kauai, had an early type of recording machine he kept on the front passenger seat of his car. He subscribed to a service that mailed him periodic tapes on medical subjects he played while driving, explaining, "It's the only way I can keep up."

In addition to plantation duties, doctors were allowed private practice using the same facilities as appropriate and needed. Hospi-

tals were available to anyone in the vicinity. Some doctors saw private patients during certain hours or in the afternoon. A few paid for this privilege, but for most it was considered part of their retainer or salary as long as they did not neglect plantation duties. In the case of Kekaha, where the very existence of the town was built around the plantation, there were only a handful of people who lived there who were not dependent on or employed by the company: a branch bank manager from Waimea who rented a plantation house, a couple of post office workers (no mail delivery), a few public schoolteachers, and the nuns who operated an elementary school that was larger than the public school. All of them used plantation medical facilities and physicians. This was a typical company town situation.

An acquaintance who had no connection with the plantation remembers giving birth in a larger plantation hospital on Oahu with the company physician in attendance. She had a private room and thinks the doctor may have given his private patients preferred treatment.

In the vast majority of cases, plantation physicians were well-respected and even beloved members of these small autonomous communities. Some were virtual folk heros, as was the case with most country doctors of the day. The premature death of Dr W.D. Balfour (1898-1947) on Maui brought an outpouring of grief from every segment of the community. The next issue of *Plantation Health* was dedicated to his memory with lengthy memorial letters from citizens indicating his status as both a physician and community leader.

In assessing plantation health and medical care of the 1920s and 1930s, it would be hard to exaggerate the influence and leadership of Dr Nils P. Larsen (1890-1964) who arrived in the islands in 1922. In 1930 he became official medical advisor to the HSPA, a position he held for more than three decades. On his death the next issue of *Plantation Health* was dedicated to his memory and achievements. Significantly that was to be the last issue. Sometime later a writer observed that the idealism and leadership seemed to have died with him.

Even before he was appointed to his official position, Dr Larsen was concerned with maternal health and child care among families of immigrant laborers on Oahu plantations. He established the well-baby clinic in Ewa, known as the Queen's-Ewa project. It opened health care centers in four of the plantation villages, called camps. Mothers were encouraged to bring their babies in daily where they were fed a balanced diet and the mothers were given instruction in care and feeding supervised by Dr Larsen and Martha Jones from Queen's. Families bore half the cost of the food which was supplied by the plantation. Dr Larsen made dental health a particular interest as the cavity rate among island school children was about two and a half times that of the Mainland. It was not unusual to see elementary school children with an entire set of teeth rotted down to black stumps. With emphasis on diet, mainly through the clinics, he almost single-handedly turned this picture around in one generation.

With improved roads and communication, in 1940 this project was shifted to Aiea where it would be available to a larger plantation population. At this time the positive impact of the Queen's-Ewa project was made by comparing the children who took part in it to the Aiea school children. The Aiea project was operated by HSPA and Queen's Hospital with help from Castle Foundation and Atherton Trust funds.

Ewa plantation seems to have been a pioneer and a model in providing for the medical needs of employees and their families. This was probably because of its proximity to Queen's Hospital, now The Queen's Medical Center.

As an outgrowth of the Well-Baby Clinic, another early concern was contraception and family planning, referred to as proper spacing. Many articles were devoted to this topic. In 1937 and 1938, a survey was made of the effectiveness of two methods of contraception discussed: the foam method and the silver ring method.

During the 1930s even before the formal organization of the Territorial Association of Plantation Physicians (TAPP, later HAPP) in 1941, the physicians met annually in Honolulu for exchange of information and formation of policies. In addition the Big Island had its own organized meetings of plantation physicians.

In 1938 Dr Marvin Brennecke of Kauai gave a detailed clinical report of the method he practiced of sterilizing the mother one to four days postpartum.

After citing several case histories observed in practice, one plantation physician wrote: "Is it good medicine or protecting a woman's health to let her have 11 children by age 32? Is it giving the children a good health chance? Are we practicing good preventive medicine when we force 11 children into a crowded cottage?"

In the 1938 gathering of plantation physicians, it was suggested that after the birth of the fourth child in plantation hospitals either of the parents be offered sterilization at the expense of the plantation. Results of a survey of plantation family planning methods and their effectiveness was given as an example of the need. In 1961 a plantation physician who attended a meeting of the National Industrial Medical Association in Puerto Rico observed that on sugar plantations in that territory this option was offered after the birth of the fifth child.

In 1955 it was reported that during the previous 13 years 1,045 sterilizations had been done in plantation hospitals with no deaths or complications. This figure included 298 salpingectomies and 269 vasectomies. These figures confirm my own observation that sterilizations were most often done on the mother even though it was major surgery, while the father's surgery was only an outpatient operation.

In that same year there was nearly uniform agreement that this family planning program had dramatically lowered the maternal and infant mortality. A graph was given in evidence. Only one plantation doctor did not agree with the policy, he wrote: "...not up to us to decide on artificial means to alter the future of humanity when divine providence seems to have taken care of us for millions of years." Two others thought it might have been "abused or used too often."

Immediately after World War II the number of physicians serving the sugar and pineapple plantations increased to 48. Twenty of these had served in the armed forces and were probably lured by the prospect of life on a Pacific island.

The TAPP physicians were justly proud of their record. By 1949 they could boast:

- Mortality rates lower than other rural areas nationwide.
- TB rates lower than national average.
- All children vaccinated (100% claimed) against smallpox and diptheria and TB tested.
- Most plantation hospitals met national standards, even one 60 miles from the nearest town.
- Better distribution of doctors and hospitals than any other rural state or territory.
- Lowered birth rate among Japanese and Filipino workers, while it had stayed the same in the countries of their origin.

At the International Conference on Planned Parenthood in Bombay, India in 1952, Hawaii was cited as an ideal, and the place that *had done something about it*. An Oahu physician who attended concluded that the birth rate is inversely proportional to knowledge.

After this conference the *Plantation News* reported: "...The health

story in Hawaii sparkles more clearly because it is a small, isolated place to which large groups of very different people have come relatively recently..."

My own experience with plantation policies was perhaps typical of the changes taking place in plantation medical practice in the mid 1950s. In the plantation hospital that served four plantations on the west side of Kauai, I gave birth to healthy, full-term, fraternal twin boys weighing in respectively at 6 lb 10 oz and 6 lb. These were my third and fourth children and when asked if I wanted to be sterilized I agreed. However, on the third day when the doctor visited me, he informed me that because I was now both underweight and anemic and had developed a slight fever, I was considered a poor surgery risk. He advised that surgery be postponed until my weight and blood count returned to normal. I was sent home on the seventh day with a large supply of iron and vitamin pills at no cost to me.

It took more than a year for my health to return. In the meantime the new county hospital in Waimea was completed and the plantation physicians moved their practice to the much-larger and better-equipped facility. Our fondly remembered *dispensary,* as it was always called, closed completely.

When I finally visited the doctor in his shiny new office, he opened the consultation with, "Have you ever had appendicitis?" Surprised, I replied that I had experienced passing abdominal pain a few times, never lasting or serious enough to require treatment. He then explained that with the opening of the county hospital many changes in policy were expected but not yet formulated, plantation physicians could no longer expect to have the final word. Policy was to be set by a county hospital board consisting of five members, two of whom were Catholic. Their attitude toward established plantation policies of sterilization was not yet clear.

So, with my permission, he would remove my appendix for the record, while including the sterilization. A short time later he reported that the board had stated there was no intention of interfering with established policies of plantation doctors. If the 40-year-old medical records still exist (which I doubt), it might be interesting to know how the surgery was recorded in the statistics. Plantation doctors kept careful and detailed statistics that were reported in *Plantation Health.*

In the climate of the last two decades when so much emotional heat can be generated by the mention of the word abortion, it is revealing to read the clinical, matter-of-fact reporting of what is alternately referred to as *termination of pregnancy*, and *therapeutic abortion*, apparently performed routinely in plantation hospitals and said to be left to *the good faith of the physician.*

My own experience in relation to plantation medical practice was a privileged one because of my husband's position, which can be illustrated by two situations. When my husband accepted the position at Kekaha Sugar Company, I inquired about medical services and was told "just go to the dispensary and check in." A few months later I did just that by arriving in a waiting room filled with a handful of laborers. I sat down among them to wait my turn. Shortly the nurse, who was a neighbor, opened the door and seeing me became apologetic. I was immediately ushered in ahead of the others. Shutting the office door, she instructed me to knock on the door and announce my arrival on future visits. Being new to the plantation hierarchy, I evidently had a lot to learn. Months later when I arrived at the dispensary in labor I was kept waiting for a short time then to my surprise was taken to what appeared to be a large private room. I was aware that there was only one private room and the harvesting superintendent's wife had given birth the day before, so I expected to be put in a ward. I found out later that a four-bed ward had been emptied for me.

But how was it for the laborers, the so called rank and file? To test this on a small unscientific sample I asked two longtime friends who grew up in small plantation villages, one on Maui and one on Kauai, where their fathers were day laborers. The first one, who had grown up on a Kauai plantation, had only pleasant memories of the medical care received by her family. She recalled a serious illness when she spent three weeks in the plantation hospital as a young woman. She recalls excellent care and best of all, and perhaps more important, it cost her family nothing. The plantation she referred to was well-known as one of the most benevolent in the Islands. The second friend, who grew up on Maui, however, remembered a mother taking her son, who was suffering from stomach pains, to the plantation doctor. After a cursory examination, he advised the mother to take him home and give him an enema. A few days later he died of a ruptured appendix. "He was 14 years old and he was my uncle," adding sadly, "and there was no recourse."

The nursing shortage of a few years ago would not have been new to the plantation physicians. The turnover was high and an ongoing recruitment program attempted to lure nurses not only from the school at Queen's, which supplied the majority, but all across the Mainland. In Minnesota a graduating nurse in the late 1940s responded to a bulletin board ad offering adventure and a job on the far Pacific island of Kauai. She was quickly hired and when her interisland plane landed at Lihue the plantation sent one of its recently hired single managers to escort her back to the nurses' quarters. A few months later she married him and quit the nursing profession for home and family. She was my next-door neighbor. At about this same time another graduate nurse answered a similar ad at her nursing school in Des Moines, Iowa. Not long after arriving she married the recently divorced plantation manager and ended her nursing career. Very few women worked outside the home after marriage. I can remember only two managers' wives who did so.

There were some exceptions. The head nurse in charge at Waimea was a single, dedicated Mainland haole who had been there for many years. Her take-charge manner was appreciated by the physicians who seemed to depend on her for administrative details of the daily operation of the dispensary. She moved to the new county hospital with them. Some plantation hospitals shared nursing services and nurses with the Territorial Board of Health from the start, usually in the more urban areas.

In 1954 a Kekaha resident, Mrs Ogasawara, whose husband was employed in the plantation shop, described the devoted care her husband received after an accident. Soon afterward she spent eight months in Chicago, during which she suffered a serious illness. When she returned home, she wrote an article that appeared in *Plantation Health* entitled "My Impressions on Hospitals." She compared the frustration of trying to get medical attention in the city, with no previous experience dealing with bureaucratic medicine. She was shunted from place to place by impersonal staff and she particularly resented the charges made for each aspect of the illness. She concludes relating the vast relief of returning home to "our little, old-fashioned, wooden plantation hospital," with the devoted care of Drs Wade and Brennecke, the personal attention of the staff, and the great advantage of having everything in one building and no bills.

During the 1950s the union was increasingly demanding a voice, including a part in the hiring of the physician, traditionally at the discretion of the plantation manager. An outside physician consultant from the Mainland was hired by the union. Interviewed on landing, he said he had always wanted a trip to Hawaii and this was a way of getting here. He followed this by making conflicting recommendations to the TAPP and the union, thus irritating both sides. None of his recommendations were followed, to the satisfaction of TAPP.

One of the union's points was: "...despite the overwhelming predominence of Oriental groups on the plantation there are very few non-Caucasian plantation doctors." To refute this, TAPP published a list of the 48 plantation physicians—8 were Oriental—plus a statement that of each 10 applications received only one or two came from physicians of Oriental extraction.

By the time of statehood the days of the plantation hospital were numbered, the rise of the union being only one factor in their demise. Actually the building of company facilities reached a peak by 1920 and with a few notable exceptions, such as the plant at Ewa in 1936, declined and then ceased after World War II.

The impact of the changes brought about with the closing of plantation facilities in the 1950s was felt most strongly on Oahu where it was happening more rapidly than on Neighbor Islands. For some the adjustment was traumatic. In a 1950 article, "When a Plantation Hospital is Discontinued," Dr P. Howard Liljestrand chronicles in part the change when Honolulu Plantation at Aiea closed:

> On a few days notice, the medical service and hospital of the plantation at Aiea were closed. The sudden loss of livelihood affecting 3,500 people and the extreme uncertainty concerning the future resulted in a stunned community, paralyzed for a time by emotional tension. There was an immediate outcropping of functional complaints like stomach pains.
>
> However, within a few weeks most of the workers had been absorbed by other industries and the community was going again, but under an entirely different routine of living.
>
> As for the hospital itself, one minute after it was closed by the plantation it was reopened as a private enterprise...Gone were the plantation outpatient clinics, the field nurse with her follow-ups, health surveys, health education, and regular physical examinations. A third of the men went to work for the neighboring plantation and thus continued to come under plantation medicine.
>
> For the remainder systematic medical care vanished overnight...That the general health service had disintegrated, however, was continually obvious. Diabetics would show up after a long period of no insulin or urinalysis.
>
> Luetics failed to continue treatment because there was no camp nurse to remind them and check on them when they failed to show up for treatment. The use of tetanus antitoxin rather than tetanus toxoid gradually increased because fewer and fewer of the injured children could show any evidence of having had toxoid immunization, as all had under the plantation. Time and again patients were brought after illness had become serious with the apologetic explanation that since it was now necessary to pay for all visits to the doctor they were avoiding the doctor as much as possible...

All free and personal care was doomed, of course, and not only with the rise of the union. The decline of the sugar industry in favor of tourism was rapid after statehood in 1959. The increased specialization and centralization of medical facilities, the success of HMSA and alternate medical plans surely contributed. After moving to the city and being arbitrarily dropped from two medical plans over the years, I too remember with a pleasant nostalgia.

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Plantation Doctor

Rodman Miller MD

Plantation medical care played an important and integral part in the development of health care in Hawaii. By the turn of the century about 103,000 individuals, nearly one-third of the entire island population, were being cared for by plantation physicians. Plantation medicine helped to develop excellent medical care throughout Hawaii.

Historical Overview

Plantation medical care played an important and integral part in the development of health care in Hawaii. At one time plantation laborers numbered as high as 53,000. Including dependents there were about 103,000 individuals cared for by plantation physicians just after the turn of the century.

At first, provision of care to these people was probably philanthropic to a degree, but certainly its purpose was to maintain healthy productive workers. Significant concerns were malnutrition (with beriberi the predominate vitamin deficiency), tuberculosis, venereal disease, respiratory infections, maternal and child care (again, nutrition was most important), infant diarrhea, and immunization. Vaccines were given as they became available, including diphtheria and smallpox. Along with the above came better surgical and orthopedic care, hospitalization where needed, and diagnostics to discover disease. This included x-rays for tuberculosis and testing of infants for anemia which was done on a wide basis during the 1930s.

The economic development of the Islands certainly proceeded in parallel with the growth of sugar and pineapple production, and medical care went hand in hand. The 103,000 people constituted a little less than a third of the entire Island population of about 368,000. The availability of medical care graduated from sporadic coverage to full coverage by the individual plantations, and then to an industry-wide medical care system. Originally care was provided free, but some time after the labor unions came, costs were levied on the members. The charges were extremely low and did not represent the full expense to the plantations.

We don't have much information before the 1880s. Early pioneers included missionary doctors such as Dr Gerrit P. Judd in the 1850 era. Judd cared for all comers, with repayment being the possible conversion of patients to Christianity.

In 1888 Dr Luis F. Alvarez served as the doctor in Waialua, Oahu covering plantation and non-plantation patients alike. His son, Walter, witnessed kitchen-table appendectomies and amputations. Dr Walter Alvarez subsequently became a consultant of national renown in the field of internal medicine. The site of his home was behind the present Waialua district gymnasium in Haleiwa.

Dr Charles Davis described medical care in an article in 1904.[1] It appears that the art of medicine prevailed over the science. Dr Davis, who was then the Ewa Plantation physician, displayed much humanity for foreign laborers. He says, "I treated over 180 patients every day of the year." His philosophy included removal of the *causae morbi*. "I would let no man go from my office who thinks he is sick, empty-handed." Also, "Pass not idly by the patient who thinks he is sick, for indeed he is." For diarrhea he gave cathartics such as calomel and then sedation with tincture of opium.

He comments that Ewa patients were young, healthy, robust men. This accounted, Davis said, for the "rapid healthy granulation of stumps and healing of wounds." He notes, however, that abscesses took on "a rapid phagodenic action running halfway up the leg...in 24 hours...and freely opened such infections."

He describes beriberi, at that time thought to be transmitted from one person to another. As treatment for severe beriberi cases he prescribed bismuth subnitrate with 1/15 grain of strychnine sulfate and Blaud's pills and then he carefully regulated the diet. His treatment was successful. (Thank goodness for diet!)

Subsequent plantation physicians included Dr Fred Irwin and Dr L.D. Sexton, who, in the tradition of general practitioners at the time, traveled by buggy through muddy roads to do deliveries, appendectomies, etc, with instruments sterilized in the kitchen. Typhoid fever was a particular problem during 1906 to 1907. Hospitals were few at the turn of the century, but by the 1930s each plantation had its own or shared one with an adjacent plantation.

In 1930, the Hawaii Sugar Planters Association (HSPA) appointed Nils P. Larson MD[2] as medical advisor, and with his help, strove to improve plantation workers' health through a study of diet and the use of supplements to the polished white-rice diet the workers and their families preferred. Other facets of health needs were also studied. The plantation bulletin, *Plantation Health*,[3] disseminated information to physicians discussing and helping to solve common problems. Dr Charles Wilbar was the editor and Dr Larson was the plantation consultant for *Plantation Health*. An organization for plantation physicians was formed, and periodic meetings were held with speakers on pertinent topics.

Dr Wilbar headed the Ewa Experimental Health Center at Ewa Plantation. Through this program, plantation children were checked for anemia, parasites, and other possible illnesses. Formula for infants and supplements for children were supplied on that plantation (in conjunction with the Board of Health and Queen's Hospital Research Department). Infant formula of evaporated milk and water plus a special run of cane syrup was distributed; cod liver oil, orange juice, guava juice which is high in vitamin C, brewer's yeast, and so on were also provided to infants.

The Ewa Project planted vegetable gardens and developed a *fruit tree project*. These gardens were formulated to supplement the white rice diet, which was responsible in many instances for beriberi and other types of malnutrition. The garden and fruit projects were started at the other plantations as well and nutritional information was disseminated.[4]

Dr Thomas Keay of Pepeekeo wrote in the 1930s that the sugar industry needed healthy workers. "Laborers are engaged to work, the men want to work. It's the duty of the medical service to keep

the men in the field in good physical condition...the babies of today are the field workers of tomorrow." He said that in 1922, when he began practice, there was a high infant mortality rate (66 per 1,000 live births), especially among Japanese and Filipino babies, which he believed was at least in part related to malnutrition. This figure decreased to 16 infant deaths per 1,000 by 1935, which Dr Keay thought was partially due to food education.[5] Obstetric problems from home deliveries were frequently a problem. Later most deliveries were in hospital.

Positive serologies were found in 10% of one group of 9,000 Wasserman tests, which included prenatal and pre-employment exams, and family members of the workers. There was only a small percentage of clinical syphilis, however. Twelve-week cyclic injections of arsenicals and then bismuth were given. Leptospirosis was identified clinically and then verified through guinea pig inoculations.

Apparently, in those days, Filipino laborers were more susceptible to nutritional disease as a result of their three-year contracts. Since they expected to return shortly to the Philippines, they often were content with an almost exclusive white rice diet in order to save money. Subclinical prevalence of malnutrition detracted from general health and vigor. Even today, older Filipino patients refer to cardiac edema as *beriberi*. Many of the Filipino laborers, after completing their contract, returned home to the Philippines. Then, having married and fathered a child, they came back to work for another number of years. Once it was discovered that lack of vitamin B_1 was the cause of beriberi, it was added to the diet in the 1930s.

Most people in the islands still take white rice in preference to the more nutritious brown rice. However, it seems that most of the people in my current practice, except possibly the Hawaiian group, have good quantities of vegetables in their diet.

Plantation physicians were required to be graduates of acceptable medical schools, to be competent in their fields, and to be dedicated and well-trained. Generally, only one doctor cared for the needs of each plantation—this included 8,000 to 10,000 people at times. In the 1930s a second physician was added. Surgery and obstetric skills, if not already learned, had to be acquired, often through a preceptor relationship. Access to specialty care was increased as the standards for medicine improved nationwide. The vast majority of accidents and illnesses were handled locally, though consultations were obtained when needed.

Personal Observations

When I was employed as a physician at Waialua Sugar Plantation, the sugar industry was of utmost importance in Hawaii and economically was second only to the military. My family and I left a rural practice in Colorado and arrived at the Waialua Plantation in 1961. I was given a tour of the plantation which was quite useful in that I understood where industrial accidents might occur and what health problems might be related to individual jobs.

The most impressive aspect of the plantation was the relative self-sufficiency of the organization. Many developments had occurred in the years since the founding of the plantation by Castle & Cooke in 1898. Irrigation (though now through disposable irrigation drip lines) still uses the original rock and mortar flumes that in turn disperse water over contoured fields. Also, an irrigation well, more than 100 feet deep with access by elevator, was built with plantation labor. A dam was constructed in 1902 of boulders and earth which formed a reservoir, Lake Wilson, for a water supply. Large siphons transported water across deep valleys. The mill, of course, had machine shops and multiple other integrated functions. All of these were under the administration of the manager and his supervisors.

One of HSPA's primary purposes was to supply technical advice including recommendations of new varieties of cane, weed control, fertilization tables, and other technological support. In addition it supported the plantation physicians organization in its efforts to provide better health.

Waialua Clinic was part of the hospital and included a small emergency room, reception and chart area, pharmacy, and examination rooms. It was originally designed for one physician; my request for a better office was incorporated into other suggestions for the hospital. We were able to upgrade and renovate where needed and the manager, Harry Taylor, and the senior physician, Dr F.H. Hatlelid, were supportive of the improvements.

The hospital and clinic included x-ray which was the *kuleana* of a versatile Filipino man who was responsible for various tasks as well as x-ray, and he could do anything including settling disputes and being an interpreter. His knowledge and ambition helped family members to become medical and nursing professionals. The lab was run by a technician who lived on the grounds and was available at all times. Periodically she could be seen at night with a flashlight looking for *Bufos* for pregnancy testing a patient's urine.

There were two wards and several private rooms. There was a delivery room and an OR. The RNs lived adjacent to the hospital, and practical nurses lived in the community. There was a hospital kitchen and a laundry. These functions were largely under the administration of the senior physician, Dr Hatlelid, and then later, me. Other administrative functions, such as salaries and cost control, were under the purview of the comptroller's office and his staff.

Physicians were expected to do the bulk of all care including orthopedics, dermatology, internal medicine, pediatrics, obstetrics and gynecology, and surgery within our capabilities. Emergencies were handled locally when possible. On more than one occasion a mother would bring in an oversized daughter in a muumuu with acute abdominal distress, which was resolved by an unexpected delivery. Self-administered Trilene through a small hand-held mask combined with pudendal blocks worked extremely well for deliveries, until it was abandoned because of some reported problems. We kept O-negative blood available for emergencies, and a patient could be transferred when stabilized, or maintained in Waialua when indicated.

Surgical, obstetric, and orthopedic consultants would respond for operative fractures, gastric surgery, and C-sections, though we did these ourselves later during my stay. There was one memorable accident on a New Year's day. Five adolescent casualties were brought in with wounds sustained from the explosion of a Coke bottle that had been filled with powder from unexploded firecrackers from the night before. One young man sustained a transection of his ilio-femoral artery and vein, and he nearly exsanguinated. I was able to access a vein as he was gasping his last breath, and give him O-negative blood and saline. As the blood was administered, he gradually picked up his respiration and other vital signs; we all heaved a sigh of relief. Meanwhile, we called Dr Scott Brainard, a cardiovascular surgeon who was visiting at his nearby beach home. With the help of his wife, a surgical nurse, the vessels were repaired. The other children had lesser wounds although shards of glass kept surfacing and had to be removed in later years.

There was essentially no ambulance service. We responded to major auto accidents at the site, or the patients were brought to our emergency room. The hospital/clinic also accepted private patients from the community as there were few other physicians available, thus providing a needed service to the community. This also helped defray costs to the hospital through private payments; such arrangements were common throughout the plantation system.

Indigents were treated at Waialua Sugar since the senior physician

was designated the Queen's Hospital physician for the Waialua District. Patients were treated on a very limited allowance. Because of the inadequate allowance, Harry Taylor, who was the manager during my stay, subsidized cost overruns from month-to-month for the drugs needed for such patients. The buck stopped with the manager who, incidentally, held special stature in the community.

My experience was that, where indicated, specialty care such as orthopedics or heart surgery was paid for by the plantation. However, such expenditures were closely scrutinized and costs were balanced against tons of sugar produced in order to provide care.

The different cultural groups and individual employees and families made the Waialua Clinic practice special. There were Caucasians (British, American, Scottish—usually managers), Portuguese (who didn't want to be classified as Caucasian or haole), Spanish, Puerto Rican, Chinese, Chinese-Hawaiians, Japanese, Koreans (few), and Filipinos. Each group had its own diversified language, culture and talents. Pidgin crossed most language barriers.

There was a tiny Japanese woman who was a practical nurse in the clinic, Sugi-san, who taught me a few very correct Japanese words and phrases which were helpful with the older population who did not speak much English. The younger Japanese had progressed to skilled jobs (supervisory, secretarial). I found them to be a proud, family-oriented group. A few close loyalties with the people with whom I worked were formed.

One of the largest families was Chinese/Hawaiian/Portuguese. They befriended us and made us feel part of the plantation family. Their luaus were special with good music, food, and hula performed by the sisters. The majority knew how to hula, especially with the eyes and the hands. The brothers were plantation supervisors in the field operation.

Adjusting to plantation life was interesting, including accommodating to the patriarchal hierarchy and becoming accustomed to different cultures. There were the *hana hana girls* who wore heavy protective clothing in the fields and were usually middle-aged Japanese women.

My wife was warned when adjacent cane fields were to be burned, producing *Hawaiian snow*. When she spoke of the resulting extra cleaning the stock answer was, "It's your bread and butter." One special memory was of being invited to see off friends on the *Lurline*. There were parties throughout the ship; singing, dancing, then the confetti, and the band playing as the ship departed, listing to larboard with the weight of all the passengers throwing out their leis and waving goodbye.

An RN who worked many years for Waialua Sugar from before World War II describes cases of gas gangrene, tetanus (before tetanus toxoid became available), and cane-knife wounds, and says in her opinion medicine and nursing did well with the available drugs and equipment. She believes the personal aspects of care rendered before surpasses in quality the impersonal care available now. As a camp nurse she visited many outlying camp clinics, doing immunizations, offering formula and food supplements, and dispensing medicines. She travelled 1,000 miles in a month on those rounds. Dr A.L. Davis, of British origin, was the only physician present in the earlier part of her service. She knows of him privately supporting the family of an impaired father. She recounts that Dr Davis made the winner in machete fights pay the surgical bill, even though medical care was usually provided free.

The paternalistic system not only furnished medical care but also housing, free kerosene, and bath houses. It seems this paternalistic philosophy created a modern widespread perception of the need to seek care for even trivial illnesses and also for expensive insurance to cover minor complaints.

On the other hand, plantation medicine helped to develop excellent medical care throughout Hawaii. Development of modern medicine in Hawaii to a great extent parallels the development of plantation medicine, just as our modern ethnic diversity resulted from the requirements for labor by these industries. Over a period of 150 years dedicated plantation physicians, nurses and other professionals led to improved care and excellent medicine in modern times. We owe much to the pioneer plantation physicians, as well as their mentor, Nils Larsen.

Today many of our health professionals are descendants of the plantation patient population. This is truly a testimony to the opportunities afforded those who came to live in Hawaii.

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2. Dr Nils Larson was a pioneer in many facets of medicine during the 1920s and 1930s and was instrumental in upgrading and modernizing Queen's Hospital. He served in various capacities for that hospital and his portrait is seen in exhibits in the hallways. He was instrumental in gathering statistics and helped formulate the program and efforts of the plantation physicians. He helped found the Honolulu Medical Group and seemed to be tireless. He is one of the true pioneers of medicine in this state and should serve as an inspiration for all, including young physicians.
3. *Plantation Health.* (Periodical) Honolulu. 1936-1964. Much of the historical information is derived from this source.
4. There was a program for high school students to work in the fields which was good training. My oldest son participated one summer. They loaded fertilizer in a plane for spreading over the different fields and then worked until the pilot came back. One time he flew low and yelled, "Somahaiya!" (Summer hire), which sounded like *bonsai* and he released the residual fertilizer on the working crew.
5. Plantation statistics for the state through 1960 were: Infant Mortality per 1000 live births; 61 in 1935-39, 13.4 in 1951-55, 16.9 in 1956-60.

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How Open Heart Surgery Came to Hawaii

Scott C. Brainard MD

The evolution of open heart surgery had its beginnings in 1938 with the closing of a patent ductus arteriosus. In 1954 Hawaii began to perform right heart catheterizations and a bubble oxygenator was made locally out of plastic food tubing and a Sigmamotor double head pump. The first open heart surgery was successfully performed at Queen's Hospital in December 1959 on a woman from Hilo with a large interatrial septal defect (IASD).

The evolution of open heart surgery had its beginnings in 1938 with Robert Gross in Boston closing a patent ductus arteriosus. Dwight Harken in World War II was removing intracardiac foreign bodies, Alfred Blalock and Helen Taussig in Baltimore developed the *Blue baby* operation in 1944, and Gross and Hufnagel corrected coarctation of the aorta in 1945. By 1948 Bailey, Harken, and Brock were correcting mitral stenosis with closed finger-fracture procedures. In Philadelphia John Gibbon and his wife Maly brought their laboratory experiments to successful conclusion in 1953 by closing two interatrial septal defects using a heart-lung machine. However, after losing the next two patients they called it quits. In 1954 C. Walton Lillehei, at the University of Minnesota, corrected cardiac defects in children employing cross-donor circulation utilizing one of the parents as an oxygenator. He was criticized about the ethics of subjecting a normal parent to surgical risks; therefore, the following year he began using a bubble oxygenator constructed of plastic food tubing designed by Richard DeWall.

In Hawaii the Bureau of Crippled Children (BCC) was supervising the care of an increasing number of children with cardiac disease. Regular cardiac clinics were being held at Kauikeolani Children's Hospital (KCH) as well as cardiac conferences regarding their treatment. There were no cardiac diagnostic procedures available to these children other than the usual EKG, chest x-rays, and physical exam. In 1956, with financial assistance from the Hawaii Heart Association (HHA), a two channel Sanborn recorder was purchased to provide intracardiac pressures through a catheter and EKG monitoring. Right heart catheterizations became a reality.

These cardiac procedures were performed in a regular, darkened fluoroscopy x-ray room with the operator wearing red goggles equipped with a sterile plastic *horn* used to manipulate the goggles when the room lights were turned on in order to draw blood or check the patient. There was no type of monitor visible to the operator so the technician would give a continual verbal report of the catheter tip location by observing the pressure curves and reporting any type of arrythmia on the EKG. Serial blood samples were drawn through the catheter from various intracardiac locations to establish the level of shunts. It would take the technician all day to run oxygen levels on samples by the Van Slyke method. KCH was selected as the hospital to start cardiac catheterization because most of the patients were children and the x-ray department was open to scheduling most of the time. The technician came from the University of Oregon, and her salary was partially supported by the HHA.

Shortly after the start of cardiac catheterizations the need for angiocardiography as a supplement became evident. There were no commercial pressure injectors available for dye injection through small lumen catheters. It was possible to purchase a 50 cc-thick-wall glass syringe, with a luer-lock tip to use with hand injections. A pressure injector that looked like a bottle capper was fabricated by Kat's General Repairs of Honolulu utilizing a car axle as a center post and a steel cylinder in which to set the syringe so that if it broke the shards of glass would be retained. This worked well until an air pressure injector with a steel syringe became available. The angiograms were recorded on a long strip of x-ray film utilizing a Fairchild head unit with a picture speed once every 30 seconds. Lacking a full-time radiologist at KCH, the procedure was not completed until the film had been sent via taxi to the Honolulu Medical Group for George Henry to inspect and pronounce them to be adequate. The cardiac catheterization results and angiograms were reviewed at a monthly cardiac conference. If a child was in trouble, the Bureau of Crippled Children would forward the materials to Dr Lillehei in Minnesota to see if the child was a surgical candidate. Some of these children with extracardiac lesions not requiring cardiopulmonary bypass such as patent ductus arteriosus, coarctation of the aorta and cyanotic lesions that would benefit from systemic pulmonary shunting, were operated on in Hawaii, usually at KCH.

In 1956 we began cardiopulmonary bypass runs on dogs using a Sigmamotor double head pump and a DeWall bubble oxygenator made out of plastic food tubing. These half hour runs were done at Queen's Hospital in the old obstetrics delivery rooms. Any of the available surgical house staff were commandeered for assistance, and it was obvious that any successful effort toward open heart surgery would have to better organize personnel and physical accommodations. Dr Sumner Price, Queen's Hospital administrator, was approached about space for experimental animal surgery. He allocated the old World War II orderly barracks and common kitchen at the *mauka* end of the Kamehameha wing for this purpose. A portion of the barracks was fitted with fencing for dog kennels and the old kitchen was set up for dog surgery.

Even though a large number of animals were destroyed weekly, the Hawaii Humane Society was very reluctant to become involved with any type of surgical program because of antivivisection leanings of their financial donors and board members. This made it difficult to obtain a supply of animals for surgery and blood to prime the oxygenator. Dr Morton Berk, president of the HHA, mailed reprints of a *Time* magazine article, which detailed the development and progress in OHS, to different companies, the Humane Society board, and HHA donors, saying OHS could be available in Hawaii but would need dog surgery to develop a team. This put the squeeze on the Humane Society to the extent that they allowed us to anesthetize the dogs they were going to terminate and use a trochar to obtain intracardiac blood to prime the oxygenator. The Humane

Society would not agree to sell or give us animals for surgery, so we would line up a member of the house staff or a friend each week to go to the Humane Society in Kapahulu to purchase the largest dog available. The $10 fee included a dog license and a veterinarian's examination which was supposed to exclude heart worms, but we still encountered a 60% to 70% rate of heart worms—a squirming mass in the right ventricle.

We received numerous dogs through private donations. If we weren't going to use them right away they had to be anesthetized and their vocal cords excised so they wouldn't disturb the hospital patients. These debarked dogs had wonderful regenerative powers and would be hoarse for two or three weeks and gradually regain their bark. We would receive an early morning call from the nursing supervisor to come stop the racket that was disturbing the patients.

A basic surgical team of Drs Albert Chun, Carl Mason, Paul Gebauer, Unogi Goto, John Hanley, and I would do OHS on a dog every Wednesday morning. This consisted of putting the animal on the pump oxygenator after anesthetizing and heparinizing it and then opening the right ventricle for a minimum of half an hour. We then repaired the heart and watched the dog for survival. Carl Mason would arrive early at the Humane Society and get two or three pints of blood, while Paul Gebauer and Mary Connor, the pump technician, would be assembling the pump oxygenator. After anesthetizing the dog, Al Chun and I would prepare the dog, open the chest and expose the femoral vessels for cannulation. We were quite fortunate that Medicare, computers, and cost accounting had not arrived—the departments at Queen's were quite liberal in giving us supplies. We could always obtain fresh pentothal from the patient mix in surgery and intravenous equipment. The central supply department would regularly phone to see if we could use outdated solutions and equipment. We calculated the cost for this disposable equipment to be about $125 per dog. We were using a considerable amount of electrical equipment which threw a heavy load on the old wiring. It wasn't unusual to blow a fuse and have to replace it during the operation. Something electrical would then have to be replaced by hand power during the pump run.

We continued to use a bubble oxygenator with the Sigmamotor pump until the arrival of the horseshoe circumferential pumps. We changed to these and a small Plexiglas screen oxygenator since it was much more gentle with red blood cells. This oxygenator would have to be cold sterilized, since Queen's did not have a gas sterilizer and had other short-comings, so we decided to switch to a disk oxygenator. As a prototype we had Hawaii Restaurant Supply fabricate a concave stainless steel trough approximately 18 inches long and 6 inches deep. Bearings were mounted at either end of the trough to support a small diameter steel axle running lengthwise on which we mounted dictaphone disks separated by 1/4 inch washers. These were enclosed with a Plexiglas cover with a connection for oxygen. By the time the blood traveled from the venous end to the outflow end, it had turned to a bright red and was obviously oxygenated; this little unit worked very well.

In late 1959 the volume of cardiac catheterizations had increased considerably due to the arrival of younger pediatric cardiologists. Demand increased further as diagnostic procedures on teenagers and adults were undertaken. The pediatric residents at KCH voiced their opposition to adult patients being admitted for cardiac catheterization so we approached the executive committee and board about the possibility of making the necessary investment to upgrade the catheterization equipment with the goal of starting an open heart surgery program later. They rejected it. Since selected angiography procedures were already being done at Queen's and with an increase in the number of adults needing diagnostic procedures, it was decided to move the majority of cardiac catheterization procedures to Queen's, and Mary Connor, the technician, became a full-time employee of Queen's Hospital.

There continued to be a lot of sick children referred through the BCC to Lillehei at the University of Minnesota for open heart surgery. Pulmonary hypertension developing from intracardiac shunts was recognized soon after the establishment of OHS so that in addition to diagnostic cardiac catheterization and angiocardiography the cardiologists working with Lillehei were requesting lung biopsies. These patients were subjected to a minithoracotomy and biopsy, usually of the lingula, and their slides, with the paraffin block, were sent for review before the patients were accepted for surgery. After heart surgery some of these children would have a rough postoperative course with complications at the sternal closure or complete heart block. The wire sternal sutures were usually bolstered with Ivalon sponges on both sternal surfaces and if they became infected had to be removed. The patients with complete heart block needed to have a cardiac pacemaker implanted since complete heart block would be lethal eventually. This required a left thoracotomy to suture the myocardial leads onto the heart. Only fixed rate pacemakers were available. They measured about 2 1/2 inches in diameter and 3/4 inches thick with two nipples protruding from the edge into which a Keith needle could be inserted percutaneously to turn controls for voltage and rate. The entire unit was covered with a thick layer of self-sealing silicone for protection if the Keith needle adjustments were used. These pacemakers were huge in contrast to the small recipient they were to be implanted in and there were many complications of skin breakdown particularly over the two control nipples. The subcutaneous pocket would have to be revised or possibly the entire pacemaker unit replaced.

Our success with the locally fabricated disc oxygenator led us to purchase a Kay Cross disc oxygenator manufactured by Pemco of Cleveland, Ohio, which could be totally heat sterilized. The oxygenator consisted of a Pyrex glass cylinder onto which stainless steel ends were fitted to support a long steel axle on which stainless steel discs were mounted separated with washers. There were ports at the proximal end for venous blood and oxygen, with oxygenated blood and gas outflow at the opposite end. The entire unit had to be boiled in Xylene and resiliconized between cases, reassembled and sterilized, a service of about 12 hours. While we were waiting for the arrival of this oxygenator, Paul Gebauer fabricated a steel table with the pump heads and controls mounted. He could raise or lower the entire table assembly to control siphonage of venous blood from the patient.

In November of 1959 we had completed 100 animal open heart procedures and felt qualified to move into the human theater. Unogi Goto had a patient from Hilo who had a large IASD and was a little cyanotic. After we explained the surgery and informed her that she would be our first open heart case, she readily agreed. In anticipation of this, Bill Kekoa, the Queen's Hospital electrician, had run additional circuits into the selected operating room (OR). We moved all our equipment to the OR, which included John Hanley's anesthesia machine from Children's Hospital, so we could use halothane. The monitoring equipment consisted of an aneroid pressure manometer with a three-way stopcock for continuous arterial pressures, a water manometer for venous pressures, and a single lead Electronics for Medicine sealed EKG monitor on John Hanley's anesthesia machine. Two operations on dogs were done at night (with Charles Price, the assistant hospital administrator, guarding the door) so that the equipment spacing, patient draping and electrical connections could be worked out. This culminated in successful closure of Harumi Yoshimoto's IASD in December 1959. The recovery room was utilized as an OHS intensive care unit.

We were grateful to have the recovery room nurses providing around the clock shifts with Harumi and the other patients. There was no medical or surgical intensive care unit (ICU) then so after 48 hours, when Harumi appeared stable, she was transferred to a private room until discharge. Today Harumi works as a seamstress for Hilo Hattie's in Hilo.

Gladys Tsugawa RN organized this recovery room unit and it became axiomatic that no matter when she called and tactfully announced that the "chest tubes felt warm," the bleeding source needed to be checked out. The postoperative cardiac monitoring was done with an Electrodyne unit which was a combination EKG monitor and pacemaker. The EKG screen was smaller than a playing card and had no rate meter, but alarms could be set for high and low rates and the pacemaker was supposed to cut in at the lower rate. This monitor was set in a tubular aluminum stand and raised above the height where explosion was a danger. All four legs, spread-eagled, were on wheels. The small screen forced virtually everybody to put their noses on the screen to read it and invariably they tripped over or kicked those monitor legs. Blood gases were not available then but we did run pHs with a Sanborn machine. We relied heavily on venous pressure monitoring for fluid administration because there were no quick-acting diuretics. If the patient had a low blood pressure, low urinary output, and low venous pressure, we gave more volume either blood or fluids but kept the patient on the dry side. The patients were all extubated as soon as possible in contrast to present protocol of longer respiratory assistance. The postoperative pain was controlled with small, frequent doses of narcotics intravenously. Actually the most frequent post operative complaint proved to be thirst.

We had a dry spell until our next case and then had quite a few cases, mostly pediatric, from Guam, Samoa and Hawaii. Many of the children from Samoa couldn't speak English. When possible, a family member would come with them, but before any diagnostic or surgical procedure could be carried out it had to be explained to the High Talking Chief who would talk to the family and then give his consent to proceed. All of these children were wonderful patients and were sent back to the pediatric ward from the recovery room. As soon as we removed the chest tubes and monitoring lines they would be out of bed and scooting down the hall to play with the other children in the TV playroom.

We did well until we lost case 13 due to mechanical problems and then continued on into the 20s without incident. The Hawaii Medical Association (HMA) held its annual meeting at the Princess Kaiulani Hotel about 1961 and Paul Gebauer took all the oxygenator equipment and table to the meeting as a display. One of the women newspaper reporters who always attended the HMA annual meetings walked up and started chatting with him about the number of cases we had done and how many had we lost. He told her we had lost case 13. She thought this was a most newsworthy item and on the front page of the second section of the *Star Bulletin* that day appeared huge headlines in red ink: QUEEN'S BARES OPEN HEART DEATH. Needless to say I received a letter from an attorney in the next morning's mail requesting specific details!

The Hawaii Blood Bank did a terrific job with the added load of these open heart cases since fresh heparinized blood was required to prime the oxygenator and for transfusion during the case, and fresh regular blood was needed for transfusion postoperatively. This required the bank to cross-match about 20 donors for each case and then have these donors show up early the morning of surgery to draw the blood. The blood bank operation of course made it really hard to delay or cancel surgery for unexpected fevers, colds, etc.

The BCC wanted accreditation of our team by a team already approved by the government so in the early 1960s they invited Dr C.W. Lillehei, cardiac surgeon, and Dr Paul Adams, pediatric cardiologist, of the University of Minnesota, to evaluate the diagnostic and surgical facilities at KCH and Queen's as well as our team. We scheduled three surgical cases in two days with a "double header" in which two cases had the same blood type. The oxygenator with the blood in it was kept intact and utilized for the second case. Both physicians observed the surgery. Dr Adams participated in cardiac clinic and conferences, watched some cardiac catheterizations, and monitored our postoperative care. They also had a follow-up clinic with cases from Hawaii they had operated on in Minnesota. It was a good learning experience for all of us and we received our accreditation.

In the early 1960s the need for an expanded cardiac catheterization department became apparent and a full time technician, Annette Wills, was employed by Queen's. Cardiac catheterizations were still being done in surgery in the room used for carotid angiography. This room had a small fluoroscopy unit and a Fairchild angio camera which would take serial radiographs similar to the one at KCH. Several younger cardiologists had started practice and the volume of catheterization cases rapidly increased. A five channel Electronics for Medicine Monitor was acquired and the procedures were moved into x-ray. In 1965 an image intensifier with a cine camera was purchased and installed by the Queen's Hospital Auxiliary allowing rapid movie filming of angiocardiograms. The image intensifier made the procedure much easier since the catheterization could be done in a lighted room. About this time hydrogen gas recirculation curves were instituted and were much more accurate in identifying intracardiac shunts. The hydrogen tank had to be kept down the hall away from electrical equipment, making it necessary for someone to leave the room and walk down to the tank with an anesthesia bladder attached to a mask, fill it with hydrogen and then walk back to the room. The patient would inhale from the mask with a timed recording to determine how rapidly the gas circulated to show if there was a defect into the right heart where the electrode on the catheter tip was located.

In the early 60s the cardiac lab purchased an oximeter which allowed blood oxygen saturation determinations to be done almost instantaneously as the samples were drawn during a cardiac catheterization. This oximeter also allowed us to determine pulmonary artery saturations postoperatively. Sometime later the cardiac lab purchased a blood gas analyzer which permitted much more precise acid-base balance during longer pump runs and postoperative care.

In 1965 Paul Gebauer fabricated a heat exchanger out of hydraulic airplane tubing that fit right into the oxygenator under the rotating disks and would allow the temperature change to be accomplished at the time of oxygenation with less blood trauma. This heat exchanger was copied and manufactured by Pemco to be sold with their oxygenator. This equipment was used with dextran hemodilution to close a septal defect in an adult patient who was a Jehovah's Witness. He did very well. We used hypothermia quite often and even used deep hypothermia down to approximately 22° C at which point the oxygenator was stopped and the blood drained from the patient into the oxygenator. After the procedure was done under complete cardiac arrest, the blood was returned and the patient rewarmed using the oxygenator.

Deep hypothermia without the oxygenator was used in two infants with total pulmonary anomalous venous return. The infants were anesthetized and then packed in ice until their temperature fell to about 20° C. This produced cold cardiac arrest and then incisions were made in the back wall of the left atrium and the anterior surface of the pulmonary veins. Anastamoses were carried out from inside the atrium. The first child's temperature was returned to normoth-

ermic spontaneously with external rewarming and the second one with the pump utilizing a heat exchanger.

The availability of hypothermia led to participation by other specialities. The neurosurgeons wanted to use brain cooling and arterial occlusion to ligate or clip cerebral aneurysms. They would do a craniotomy while we dissected out and cannulated the common carotid arteries and one femoral artery. Also both vertebral arteries were encircled with occluding tapes. With the patient on a warming blanket to maintain body temperature, cooled femoral artery blood was pumped into both carotids to achieve rapid brain cooling. Then with all four cerebral vessels occluded, the neurosurgeon would deal with the aneurysm after which the patient's own circulation was restored to rewarm the brain. Several extremity malignancies were treated using a heat exchanger in conjunction with a small bubble oxygenator to perfuse and arterially isolate a leg. Extremity hyperthermia was used in conjunction with an anticancer drug being introduced into the system for a specified time. This caused a rapid regression of the malignant lesion and reduction in pain for a time.

In 1961 the Starr ball-valve prosthesis was introduced for replacement of the mitral valve. This was followed shortly by aortic valve replacement. As is usually the case with new procedures the sickest patients were selected first. They had had the full medical course, were usually in negative protein balance and chronically ill. These patients didn't do well with surgery unless their heart failure was relieved. This was the period when mercurial diuretics, digitalis and low salt intake were the mainstays of treatment for cardiac failure. To reduce the energy requirements of respiration on the heart, a tracheotomy was done. Utilizing low pressure tracheotomy tubes, breathing was taken over completely with an Engstrom respirator. The Engstrom respirator came from Sweden and was well engineered to deliver specific ventilatory requirements. These patients would usually improve in 48 hours and then the internists would want to wait another 24 hours before surgery. The patient would often lose some of their improvement and then we would have to deal with another 24 hour postponement or proceed with surgery. The Engstrom respirator had a built in anesthesia unit so it could be utilized during surgery. We began by using the Starr ball valve for mitral valve replacement. Then during the 60s there was a flood of new valve prostheses designed with a low profile in which the ball was replaced by a flat disk because the ball in the Starr valve took up too much space in the ventricle causing a low cardiac output syndrome postoperatively.

Dr Frank Spenser at the New York University School of Medicine pioneered the technique of placing a small diameter polyethylene catheter through the chest wall, into the right ventricle and on into the pulmonary artery to use for pressure monitoring and blood sampling postoperatively. Pulmonary blood oxygen saturation gave a very useful indication of cardiac output. Faced with a low saturation, even though the patient appeared to be doing well, you knew that the patient would never leave the hospital unless you could improve cardiac output.

The aortic valve results were better when replacement was done with a homograft. So we collected and measured aortic valves from autopsies and then freeze-dried them to be reconstituted at the time of surgery. They were a lot more difficult technically to suture into what was frequently a calcified aortic root without twisting or deforming the graft. Nevertheless, aortic homografts were a lot better from a physiologic and an embolic standpoint. A supply of homograft aortic valves was hard to come by and ultimately we started using commercially prepared porcine mitral and aortic valves sutured onto stents.

The early 1960s saw a large increase in patient volume at Queen's, both medical and surgical, bringing about a demand for an ICU. One was constructed at the Ewa end of Nalani II and was supposed to accommodate both medical and surgical patients. Electronics for Medicine wall-mounted bedside monitors with a central console were installed and for the OHS patients a portable three channel Electronics for Medicine unit was used which put the EKG and venous and arterial pressures on the screen. This ICU was poorly situated for surgical patients because of the distance from surgery and the elevator ride necessary to reach it plus the poor patient monitoring during the trip from surgery. Demand for these ICU beds far exceeded the few beds available and there was a constant battle between the internists and surgeons for them. Ultimately in the early 1970s additional surgical ICU space was built on the Diamond Head end of Kinau IV and a medical ICU on Kinau II.

The 1960s were dynamic and innovative for OHS. There were many mechanical and perfusion problems experienced by all teams and attending bull sessions at the thoracic surgical meetings was quite rewarding in solving these problems. Some of the problems discussed were: sucker design to avoid hemolysis, type of blood filters to use, postoperative headache and occasional confusion suspected of being due to silicone particles, optimum perfusion rates and temperatures. Also, there were two separate camps: one in favor of coronary perfusion, the other cardiac arrest. The *Thoracic Surgery Journal* changed its name to the *Journal of Thoracic and Cardiovascular Surgery* to reflect these changing interests and the articles covered many approaches to exposure, instruments and ideas for improving OHS, as well as pitfalls. It is interesting that during this decade there developed two main divisions of thoracic surgeons: the older group with a primary interest in lung diseases and cancer and the younger group just coming out of residencies more interested in open heart surgery. This finally resulted in the establishment of the Society of Thoracic Surgeons by the younger group with their own journal, *The Annals of Thoracic Surgery*. [Dr Brainard was a founding member of the society.—AM]

There were many foundations and individuals who made it possible for us to perform the first open heart surgery in Hawaii on Harumi in 1959. Financial assistance by the McInerny Foundation, Mary Castle Foundation, Hawaiian Electric Co, Hawaiian Telephone Co, Honolulu Gas, Hawaii Heart Association and the Medical Group Research Foundation as well as the Queen's Auxiliary and Queen's Hospital Board were ongoing and always generous. There were many individual contributors who gave their time and knowledge. To name a few: Lucy Douglas, Fran Batura, Gladys Tsugawa and the recovery room nurses, Thelma Jones, Bess Owens, Yoki Higa, blood bank personnel, Will Henderson, Katsuki Nakamoto, Kenneth Bermudes and many others to whom we are indebted and grateful.



Reminder

Please complete and return the readership surveys that were in the October issue of the Journal. Extended deadline is November 30.

News and Notes

Henry N. Yokoyama MD

Life in These Parts

ERT Confusion

The June 15 issue of the *New England Journal* published a Harvard Med School team report of a 46% increased risk of breast cancer in women ages 50 to 64 who were on hormones for 5 years.

Hawaii cancer researchers rose in defense of ERT despite the report. **Brian Issell**, director of the Cancer Research Center of Hawaii, said, "The risk is not all that great." He pointed out far more definitive results will come from the Woman's Health Initiative which began two years ago with Hawaii as one of 40 study sites. **Mari Nakashizuka**, medical director of the Breast Health Center at Queen's says, "With all the beneficial effects we know for sure exist, I would continue to recommend hormone replacement."

Helen Petrovitch, U of Hawaii Med School researcher, explained that the new study was based on information from the ongoing Nurses Health Study of 121,700 women and was not definitive.

Researcher

Richard Wasnick, head of Hawaii Osteoporosis Center, says certain groups have problems with osteoporosis: Female athletes who exercise so much that they stop menstruating; Asian-Americans with lactose intolerance and a lower consumption of dairy products; and young women with eating disorders. Dick says, generally two-thirds of women end up with osteoporosis while 30% of men develop osteoporosis as they age, especially in the 80s. A 5-minute bone densitometry will give a clear indication whether a life-style change or medication is appropriate.

David Curb, Honolulu Heart Program principal investigator, reports that a 30-year ongoing study suggests that Japanese-American men in Hawaii are the longest lived in the world. David adds that both Japanese men and women in Hawaii have a longer life expectancy than anywhere else. The NIH has spent $25 million since 1965 on the long-term study of 8,000 Japanese-American men on Oahu.

Marian Melish, prof of pediatrics and chair of the medical school faculty senate, proposes a med school tuition increase from $5,800 a year to $10,800 to offset a $1.3 million medical school budget cut. The tuition increase for 200 med students will raise $1 million or more. Marian says, "While we recognize that a substantially increased tuition would be a hardship to our medical students, we felt that we needed to enhance our revenues in order to preserve the quality of the school or even the existence of the school."

Physician Moves

August—Radiologist **Ryan Matsuo** associated with Radiology Associates, Queens POB II, Ste 87. (Ryan will do angiography/interventional radiology at QMC dept of Radiology)

September—Pediatric surgeon **Jennette Boakes** in Shriners Hospitals; first full-time assistant chief of staff. Jennette will assist chief of staff **Kent Reinker.** OB-Gyn **Jan T. Fujita** joined her brother and OB-Gyn **Jon S. Fujita** at Aiea Medical Building, 99-128 Aiea Heights Drive, Suite 402. (With their dad **Sidney Fujita**, they make an OB-Gyn trio.)

Orthopod **Gregory H. Chow** (a member of Orthopedic Associates of Hawaii) opened his practice at Kapiolani Medical Center at Pali Momi, Suite 300, and at Queen's POB I, Suite 608.

Potpourri

Cartoon of two rhino discussing their horns: One rhino is saying to the other: "Well, I've had it, 15 years and, frankly, I don't consider it much of an aphrodisiac."

Snoozing Sickness

by David Rapaport (From *Stitches*, July-Aug '95)

Snoozing sickness is one of the most demoralizing problems that we physicians face. We all joke about nodding off during conferences as soon as the room is darkened for slides, but inflicting this on a patient is unacceptable.

Trying to stifle a yawn by doing it with mouth closed is a squeaky, noisy process.

The doctor might appear to be in deep concentration. Snoring destroys this illusion, of course.

Stage 2 is the related problem of snoozing, not to be confused with narcolepsy because it only lasts for seconds. It's accompanied by the head nodding and/or jerking back.

Stage 3 of snoozing sickness, actually falling out of the chair, is quite dangerous. Even this may have escaped notice, as I alertly pretended to be retrieving my pen from the floor.

In my case, I came to realize that yawns and snoozing occurred mostly in the deadly after-lunch *siesta* period, particularly following a large meal.

Re a fellow physician:

"I noted that over about 30 seconds, his eyes closed slowly down to narrow slits and his mouth drooped open as his head went back. This is known as the classic catching-flies pose."

A Glossary of Useful Research Phrases

(From *Stitches*, July-August 1995)

"It has long been know that..."
I didn't look up the original reference.

"A definite trend is evident."
These data are practically meaningless.

"...of great theoretical and practical importance."
Interesting to me.

"Time and time again."
I've seen two cases of this.

"Three of the samples were chosen for detailed study."
The others made no sense.

"While it has not been possible to provide definite answers to these questions..."
This experiment was unsuccessful, but I still hope to get it published.

"Typical results are shown."
The best results are shown.

"The most reliable results are those obtained by Jones."
He was my grad assistant.

"It is believed that..."
I think.

"It is generally believed that..."
A couple of other people think so too.

"Correct within an order of magnitude."
Wrong.

"A statistically oriented projection of the findings..."
A wild guess.

"It is clear that much additional work will be required before a complete understanding of the phenomenon is possible."
I don't understand it.

"A careful analysis of obtainable data..."
These pages of notes were obliterated when I knocked over a glass of beer.

"A highly significant area for exploratory study..."
A totally useless topic suggested by my committee.

Conference Notes

"Arthritis Management in Managed Care Environment"

Visiting professor James McGuire from Stanford at QMC-UH Friday morning conference Oct 6, 1995:

- **RA Management & Cost**
 Stanford Clinic sees 17,000 patients per year. Cost when treated by rheumatologist: $6,000 per year; primary care MD: $3,500 per year. Cost breakdown:
 - Hospitalization: highest
 - Lab cost: next
 - Drug cost
 - Physician fee: lowest

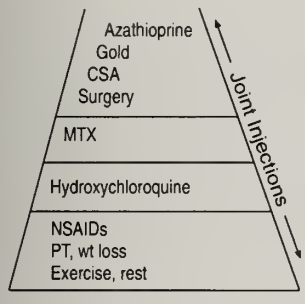
 – Accuracy in diagnosis and early treatment lowers the cost
 – Rheumatologist sees-RA patients after two years of disease onset. Primary care physician sees the earlier cases. Drug costs rise with MTX Rx (ie, the monitoring of the patient). Lab tests: To repeat RF is unnecessary and raises the cost.
- **Relative Incidence**
 Rheumatoid Arthritis (RA) and Osteoarthritis (OA): 5 million RA patients in the U.S. versus 50 million OA patients.
- **Diagnosis of RA patients**
 Early RA (Before 2 yrs)
 Asymmetry (joint involvement)

x-ray: no erosions
RF negative
Fatigue, malaise, morning stiffness, etc.

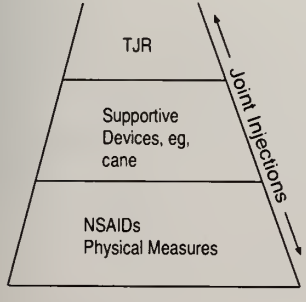
Late RA

Symmetry of joint involvement
X-ray: erosions present
RF positive

- **Prognosis RA**
 A function of monitoring ADL (activity of daily living). Mortality is a function of ADL.
 Survival of RA patients depend on:
 - Earlier therapy
 - Ability to keep patients going
- **Therapy**
 RA-Diagnosis specific Therapeutic Plan



- **Drug Therapy RA**
 Primary care MD:
 - Motrin (At Stanford generic Motrin costs 2 cents each)
 - Plaquinal (No retinopathy when used less than 6 months)
 - Inject joints, eg, knees, shoulders
- **Rheumatologist: MTX**
 Prednisone Low dose: less than 7.5 mg/d
 Complications of Prednisone Rx:
 –Infections 39.9%
 –GI bleed 20.1%
 –Fractures 19.6%
 –Cataracts 15.5%
 –Osteoporosis 1.3%
 –Endocrine 1.0%
 Prevention osteoporosis in RA pts on prednisone:
 –Calcium supplements: 1 gm calcium/d; cheese, milk, ice cream
 –Resistive exercises
 –Walking program
 Studies have shown that even with strict bed rest, walking 15 minutes/24 hr will reduce urinary calcium excretion.
- **Therapy: OA-Diagnosis Specific Theraperutic Plan:**



–Physical Measures: weight loss, PT, exercise
–Joint injections will reduce cost by delaying TJR (total joint replacement)
–OA pts with hip or knee pain:
Hip: greater trochanteric bursitis
Knee: bursitis; ie, medial and lower knee.

- re NSAIDs: Use proprionic acids
 eg, Motrin 3-4 x /d
 Naprosyn 2-3 x /d
 Daypro: 1 x /d
 Avoid feldene: it causes GI bleeding.
- re gold and MTX therapy: gold Rx takes 3 months to work; 18 months maximum duration. MTX Rx: 2-3 weeks to work; use indefinitely.
- re GI bleeding with prednisone Rx: only when prednisone used with NSAIDs.

Joke of the Month

(Asimov Laughs Again)

A senatorial candidate felt it would be best for his political future if he demonstrated an interest in Native Americans.

He, therefore, visited a Navajo tribe and launched into an impassioned speech. The Navajos listened and shouted with fervor, "Ungah! Ungah!"

The candidate wound up to a tremendous peroration and, amid the repeated enthusiastic cries of "Ungah," came to a perspiring and breathless halt.

The chief of the tribe stepped forward and said, "Mr Senator, we of the tribe are grateful for your interest in us and wish to bestow a gift on you. In yonder corral are the tribal horses. Go in and choose which one you wish to have as your own, but please, be careful not to step in the piles of ungah."

Paul Gebauer's Letter to the Editor

(June 8, 1995, extracts therefrom)

Social Security is a federal fiscal flop. Many years of Social Security benefits have produced the following unwanted by-products: secret burials, even murder for the monthly checks; a rash of holdups and robberies of mail delivery people in LA; and a new U.S. industry (nursing homes).

1934: Social security is born. Pneumonia, tuberculosis and hypertension cause most of the deaths. In church and community-operated old folks homes, vegetative and terminal states are not supported.

Today: The extension of longevity past 70 years (considered such a fruition) that preservation of life regardless of quality, consequence, or cost has replaced those easy deaths in old folks homes. The old folks homes have been replaced by a huge industry—nursing homes (25 on Oahu) where the support of hopeless living is common and especially sad in cases of senile dementia. Its victims are certain to become so numerous that society will re-embrace and decriminalize euthanasia and possibly make it an available public service. Euthanasia would slash Medicare costs, rescue Social Security funds, and may bring back nonprofit old folks' homes.

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HMA members.— Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
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The Weathervane

Russell T. Stodd MD

No matter how you slice it, it's still baloney.

The ranks of states that do not have an optometric therapeutic law are growing thinner. Illinois and Nevada are the most recent states to allow optometrists to use some form of therapeutic medication. Five states remain without treatment laws—California, Hawaii, Massachusetts, New York, and Pennsylvania, however, the New York legislature passed a bill which remains unsigned on the governor's desk. The most recent Hawaii legislative session produced a bill which was deemed unacceptable by the optometric leadership.

I can't understand why people are frightened of new ideas. I am frightened of old ones.

A recent Illinois judicial ruling has the potential for wide impact on the independence of doctors. The court ruled that hospitals may not employ doctors for the purpose of seeing or treating patients. Specifically, the court ruled that the contract violated the Illinois Medical Practice Act which prohibits the corporate practice of medicine and the "fee-splitting" arrangement spelled out in the employment contract. Moreover, many hospitals are licensed as nonprofit corporations, and the law under which they are qualified does not include the practice of medicine under permitted activities.

The greater the cost of putting a plan into operation, the less chance it will be abandoned—even if it subsequently becomes irrelevant.

Despite aggressive promotion, corneal laser surgery has failed or barely succeeded in Italy, Korea and Spain. Canada has flourished, largely from the flow of Americans who make up about 80% of their clientele. Yet even in Canada, experts say the laser is not necessarily a gold mine because supplies and maintenance can run $75,000 to $100,000 each year. A recent study by Arthur D. Little, Inc, found that market projections have been grossly exaggerated. However, while the FDA has yet to approve the procedure, the medical industrial complex is tooling up. Using promotional seminars and 800 telephone numbers, more than 20 would-be laser surgery companies are busily luring doctors and investors. The hucksters are projecting $700 million in revenue with $171 million in profit by 1997. If one assumes the procedure will be approved, and the cost projected to be about $2,000 per eye, what will be the public acceptance? As Arthur D. Little, Inc, has determined, there are serious doubts.

I can remember when the air was clean and sex was dirty.

When photorefractive keratectomy (PKR) wins approval from the FDA, two states will possibly permit optometrists to perform the laser surgery. Idaho and Oklahoma have laws so liberal that optometrists can take laser courses and apparently become "comfortable" with the procedure. And perhaps you recall a few years back when naturopaths promoted a bill in the Hawaii State Legislature to allow them to perform surgery.

Managed care—health hazard for doctors and patients.

A Seattle doctor wrote to the *JAMA* complaining that managed care was affecting his blood pressure. His office nurse monitored his blood pressure every day for a month after his phone calls to insurance plans, and found that his pressure averaged 154/95. His BP was 139/80 during other activities. Attempting to refer a patient with numbness in her hands to a neurosurgeon, he waited 20 minutes only to be turned down. In another case, it took extraordinary effort to get a patient with a possible retinal detachment to an ophthalmologist rather than an optometrist.

Wise men learn by other's mistakes—fools by their own.

A patient suffered a transient ischemic attack and sought medical care at a hospital emergency room. His cardiologist referred the patient to a neurologist who determined that the patient had previously had TIAs, and he believed the patient was at great risk for having a major stroke in the near future. The patient signed a consent form, and a surgeon performed an angiogram. During the procedure the patient had a stroke and later sued the hospital, the neurologist, and the surgeon. The hospital was dismissed from the case, and the jury supported the neurologist, but ruled against the surgeon. Reason: the jury thought a reasonable person would have consented to the angiogram, but the patient was not capable of giving informed consent.

The bitterest wine is always drained from crushed ideals.

The attempt to eliminate health care fraud has generated a nationwide campaign by federal and state agencies. In the biggest medical fraud yet, National Medical Enterprises of Santa Monica, California, has paid out $370 million in fines and restitution. The executive who conceived the scheme pleaded guilty to masterminding $20 million in kickbacks, and named names. He got probation. However, one of the names, a PhD-licensed counselor, pleaded guilty to accepting payments for referrals, and got eight years in prison! The reason for punishing the doctor and excusing the supervisor was explained by the "fact that the doctor was betraying his professional duty." The direction now is for prosecutors to settle charges against corporations, and then go after individuals, especially doctors.

You get what you pay for. But if the government runs it, you may not get it at all.

Norway is a rich little country. The 4.3 million people enjoy a lucrative North Sea oil enterprise, a busy fishing industry, a large maritime fleet, and bounteous hydroelectric power. Yet their cradle-to-grave socialized medical system is in trouble. Its aging population has too few workers supporting too many sick people. Elective surgical procedures may be delayed six months or longer, especially cataracts and benign prostatic disease (catheters and bags).

Addenda

- 94% of all heart attack patients eventually leave the hospital alive and well.
- Real Kona coffee goes for almost $20/lb. All less expensive *Kona* coffees are blends, with perhaps as little as one Kona bean/lb.
- Why did Bob Dole cross the road? To get to the middle.

Aloha and keep the faith— rts ■

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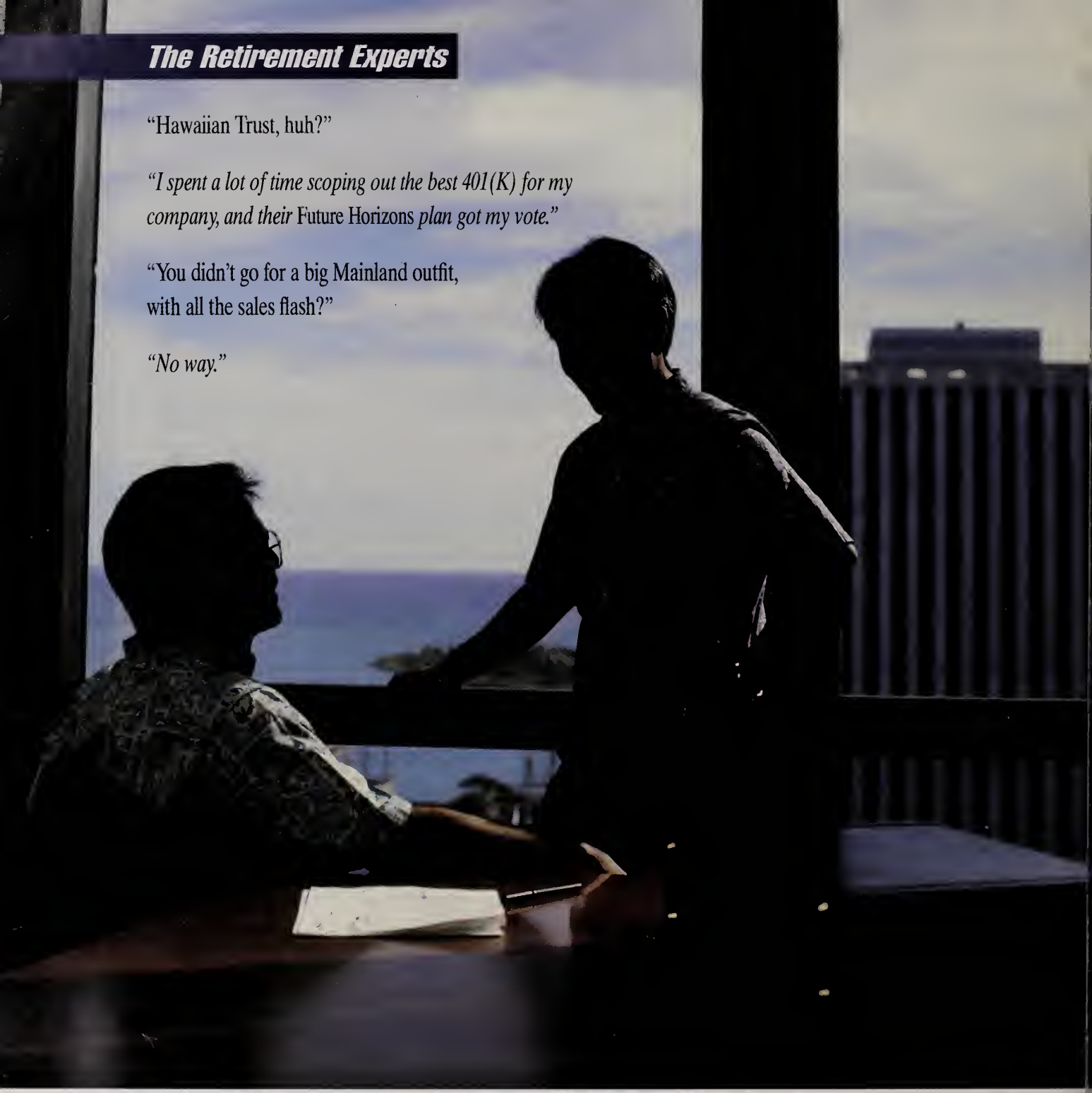
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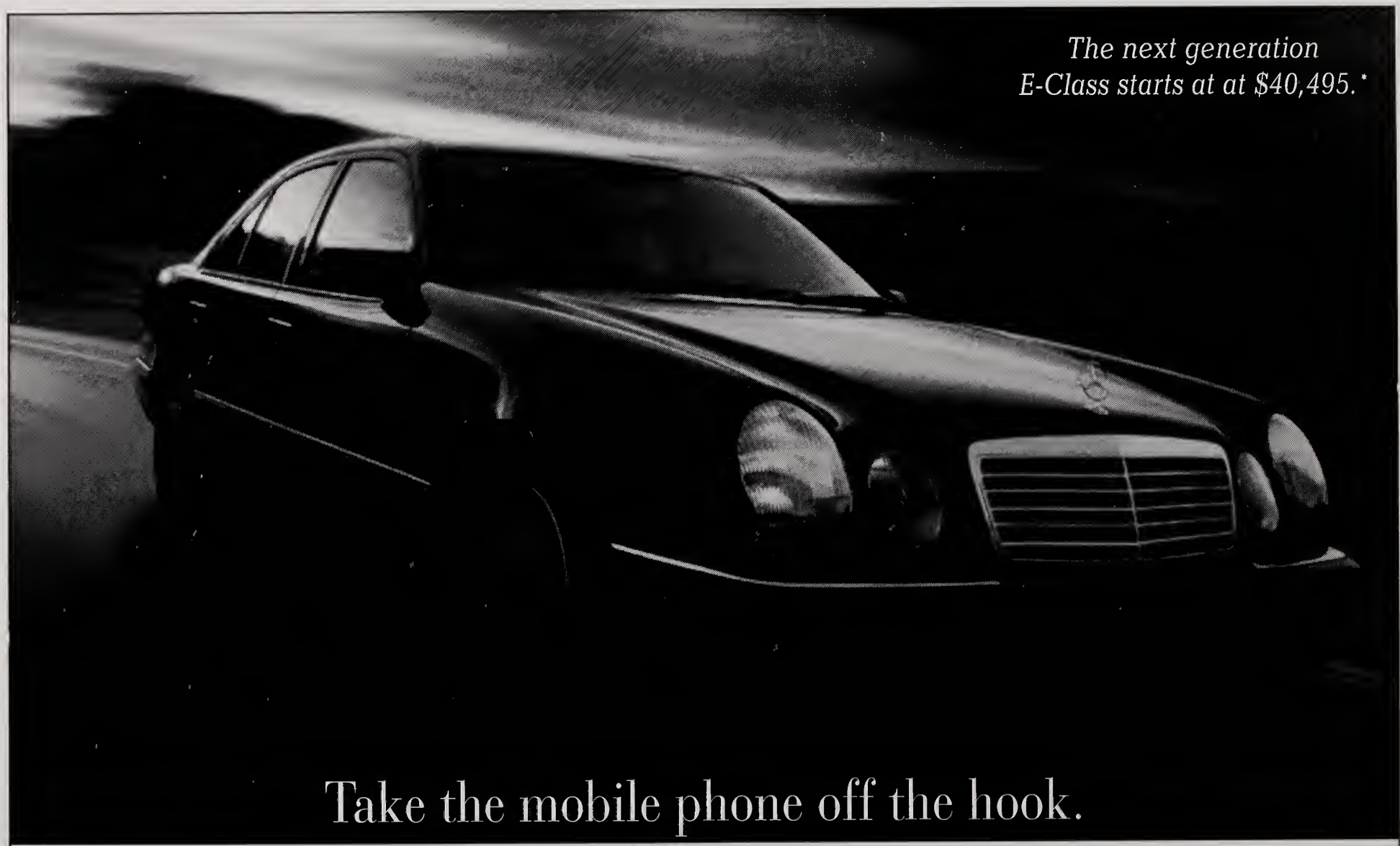
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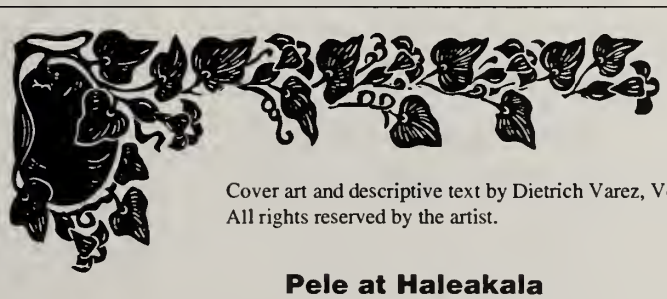
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Pele at Haleakala

Pele, goddess of Hawaii's volcanos, also spent some time on the island of Maui. Up in Haleakala crater she dug with her special digging stick in search of a home. Eventually, after a fight with her sister, she left for Kilauea where she has been ever since.

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Editorial

Norman Goldstein MD

Yes, it has been two years.

This issue of the *Journal* is our 24th in the *New Journal*. In addition to some very scholarly manuscripts, we have receeived the practical as well as the esoteric. We have tried to publish a variety of subjects—to appeal to the broad base of our membership. Our special issues have been especially well received. The Hawaiian Medicine and Health; Medicine Law and Bioethics; 75 years of Military Medicine in Hawaii; and last month's issue on the History of Medicine in Hawaii—as well as our Fred Reppun Memorial issue and the Fred Gilbert Festshrift have all been superb *Journals*.

Many thanks to the authors, guest editors, and a special thank you to our *Journal* staff: Jan Estioko, Carol Uyeda, Becky Kendro, and Noreen Kamiya.

Our covers by Big Island artist Dietrich Varez with quality printing by Pacific Printers are classic.

The advertisers deserve a special *mahalo*, too. We need you!

Thank you to our association of officers, our office staff, our peer reviewers and our editorial board for their support.

We look forward to another great year in 1996.

HMA President's Message

Carl W. Lehman MD

The HMA Leadership Planning Conference on Sunday morning October 29 from 8:30 to 11:30 was extremely well attended with our HMA Conference room filled to the max with about 65 physicians. Not only was the attendance great, the enthusiasm and participation were superb. With the interchange of ideas and discussion, many new ideas surfaced. The committee chairs are urged to incorporate these ideas into their plans and activities for the upcoming year. Committee chairs are not restricted by the goals suggested at this meeting—they are intended to be helpful catalysts in energizing the activities of the committees. During the discussions it was apparent there are functions of several committees that overlap. The chairs are encouraged to plan combined committee meetings when appropriate.

In addition to meeting with and working with legislators and their staff, acting as a liaison with the community, and serving as a resource for the HMA on legislative issues, Dr Au has submitted a proposal from the Legislative Committee that will enable it to be representative of the entire organization. The core committee will be composed of specific committee members and HMA officers. The work on specific legislative bills and activities will be done within each of many working committees. If a member wants to participate and be active on a given political issue, he or she will be assigned to the committee working on that particular issue.

The following is an outline of the Legislative Committee structure to aid in your understanding of how that committee will function.

Purpose: to coordinate and facilitate the representation of legislative opinions and policies on behalf of the Hawaii Medical Association. The committee in itself does not necessarily formulate policy on any particular issue but may advise Council of recommendations. Where possible, the Legislative Committee should promote involvement of the entire organization in legislative matters. Although not a member of the Legislative Committee, every member of the HMA should feel a commitment to all of the issues reviewed by this committee. The committee, as well as the organization, should foster the ideal of the entire HMA as a legislative body, rather than just being represented by the Legislative Committee.

Each member of the Legislative Committee will be assigned oversight duties for a particular issue. The Legislative Committee will serve as a clearinghouse and coordinator, and not the official policy-making body of the HMA.

Specific recommendations of the planning conference are:

- Create a Communications Commission with Public Relations, Publications, Computers, Membership Benefits and Membership Recruitment under that commissioner.
- Improve communications via electronics with Hawaii Online, a home page, and AMA Net.
- Provide a one or two-hour meeting on Davis Rules of Order prior to the House of Delegates.
- Consider restructuring the HMA with input from the Long-Range Planning Committtee, all past presidents, and revise the bylaws.
- Committees in the Public Health Commission saw the need to work together: Educating the community about domestic violence, tobacco prevention, and alcohol and other drug use remain top priorities. It was noted that a facility for drug-addicted youths should be studied, the crack versus cocaine sentencing should be reviewed, and the tolerance level for alcohol and driving should be examined. Another concern was the safety of patients who use alternative methods of healing.
- Physicians Health Committee needs to raise funds to hire a substance abuse counselor.
- Medical Legal needs to update the code.
- Continue to look at medical savings accounts.
- Managed Care Committee will work on education and dialogue with existing managed care groups.
- Monitor QUEST and other County/State programs.
- The format of the annual meeting will be evaluated for possible changes.
- Review legislation for a 24-hour care option.
- Overview of No Fault Law.
- Chairs of committees are encouraged to schedule their meetings more than one month in advance when possible. We will publish the known schedule of committee meetings in the *Newsletter*. These dates and times are subject to change, so please call first to confirm and let the committee secretary know you are coming. Members who wish to attend a specific committee meeting are invited to contact the chair and attend the meetings or present specific issues of concern.

After the planning committee, the Council met. One of our members, Bernard Portner MD, called to our attention the inequities of the Hawaii No Fault Law; his case was referred to the No Fault Committee for further study. He and I also attended a House of Representatives Committee meeting on October 30 and presented our objections to the present law and how it interferes with good patient care.

This week has been exciting for me as your new president to see the enthusiasm and activity of organized medicine accomplishing things that individual physicians cannot accomplish on their own. Let's keep up the good work!

Alliance

Cherlita Gutteling
Alliance President

Our new AMAA president, Sharon Scott, is calling for our medical Alliances this year to strive for unity and to put a *personal face* to our community work. That should be an easy task for those of us from the state known for its aloha spirit. This coming year, we reach out in that aloha spirit to all potential Alliance members and to the communities our spouses serve.

We wish to rebuild a medical Alliance that is strong and visible as a caring group in every county of the state of Hawaii. There is more need than ever for Alliance members to help keep the caring face of medicine prominent among ourselves and our communities. As physician's spouses, we cannot help but be affected by the challenges in the medical profession today. Sometimes those challenges are so overwhelming it is difficult to simply survive let alone remind ourselves, as our national president says, that we are protectors of certain rights of medicine, both for ourselves and our patients.

And we do care. The medical spouses I know are active, intelligent, professional, and caring. Individually, so many of you give your time to so many worthy causes. Wouldn't it be a source of strength and satisfaction to have meaningful affiliations with others who share your concerns? Acting together, we can make an even larger community impact. As a group, we can support the national project of the year: SAVE—Stop America's Violence Everywhere. Who more than physicians and their spouses are aware of the personal pain and psychological damage perpetrated by the violence our doctors are asked to repair? This project and others need all of the aloha we can bring them.

The benefits of cooperation and caring are personal, too. This year on the island of Hawaii, we have experienced firsthand the importance of a cohesive, caring group. More than one physician has faced an unexpected, difficult challenge in his or her profession that deeply affected the spouse and family. Whenever something adverse affects one physician, it often reverberates throughout the medical community. Because our Alliance is strong and caring and personally involved with our members, we were able to offer immediate support. All of us gained new appreciation for the spirit of aloha. We can extend that statewide.

One thing that keeps some potential members from joining the Alliance is that they are already so busy. But everyone needs to recognize that one benefit of Alliance membership is that there is room for all kinds of commitment, from long-term heavy commitment to very short-term light commitment. There are officer and board openings that require heavier responsibility and time, committee chairs with limited time commitments, and committee members and event volunteers who support one day or one weekend as they wish. The important thing is that as paid members we have options, both to give and to receive from the HMA Alliance.

One last word: Stereotypes are strange. When there is little knowledge of what a group is or does, when little knowledge of them as individuals and of the work they do is known, negative stereotyping seeps in. When that same group becomes known and more visible for its good work, it takes on a completely different *face*. We have the opportunity to put whatever *personal face* we want on our Hawaii Medical Association Alliance. My dream is that whenever our name is heard, it will bring a warm smile and a feeling of the spirit of aloha!

Note: If you wish to form a medical Alliance in your area to reactivate your group, or if you are not now a member of the Hawaii Medical Association Alliance and wish to join, please call me at (808) 935-2526.

Military Medicine

Benjamin W. Berg MD
Department of Medicine
Tripler Army Medical Center

Ulaanbaatar, Mongolia.

A team of 16 military medical personnel from Tripler Army Medical Center traveled to Ulaanbaatar, Mongolia in September 1995. This team was comprised of five surgeons (general, thoracic, ENT, OB/Gyn, and orthopedic), two pediatricians, two family practitioners (one staff and one resident), two internists, one preventive medicine specialist, one anesthesiologist, one laboratory pathologist, one dentist, and one preventive medicine officer (nonphysician).

This team was deployed to participate in an ongoing program of annual medical support and exchange between the U.S. and Mongolia. Exchange of ideas, the delivery of health care, and the assessment of an evolving modern health care delivery system were the primary goals for the team. Health care was provided primarily to civilians; both civilian and military medical facilities were visited. The team experienced a warm and receptive people who treated them like family.

My last visit to Mongolia had been in February, and the most striking difference in September was the weather! I was not able to see my breath in the fall, and the hospitals were much less populated than in the cold dark winter months. During the summer months much of the urban population of Ulaanbaatar retires to the countryside, where over 40% of the nation's 2.2 million people reside. The rural population maintains a nomadic lifestyle, raising sheep and cattle on expansive prairie-like terrain. Health care in the rural regions is deliv-





Acupuncture therapy for Bell's palsy.

ered by feldshers who are trained in three-year practical apprenticeships. The feldsher's scope of practice is similar to that of a physician assistant in the U.S., and they frequently travel by camel or horseback to care for patients.

Medical training in Mongolia has undergone a revolution in the past five years. Since Soviet Russia withdrew support and personnel from Mongolia in 1991, economic realities have been harsh. A technologic infrastructure with little sustaining expertise or cash for maintenance exists. Much medical equipment is nonoperational and the dire need for supplies is evident. The medical school in Ulaanbaatar has decreased the size of the class from 400 to 35. In earlier years many students were sent to the USSR, other Soviet block nations, or to European countries for advanced training. Few opportunities for foreign training exist now. Virtually all physicians now are trained exclusively in Mongolia. The medical curriculum begins after secondary school and lasts for six years; thereafter, all physicians train for one year as intern equivalents. Advanced training in surgical, medical, or other specialties consists of one year clinical training. An examination is administered after one year, to certify competency in the chosen field, be it neurosurgery or pediatrics. A junior physician in Ulaanbaatar earns the equivalent of $40 a month. An average apartment rents for $6 a month. Many people live in traditional skin-and-felt dwellings called yurts. These dwellings have been integrated into the urban sprawl of Ulaanbaatar.

Medical practice in Mongolia is a melange of traditional Mongolian techniques, Soviet block medicine, and evidence-based modern Western medical practices. Cultural practices influence expectations of both patients and caregivers. We found our concepts of continuity of care, chronic care, and differential diagnosis generation to be relatively alien, but not unheard of by our colleagues in Mongolia. These concepts were impractical to implement because there are scant resources for diagnosis, long-term therapy, or for transport to regular medical follow-up. Patients reported organ-based symptoms, such as, "I have a pain in my heart." Complaints were frequently accepted and treated by physicians without inquiry as to the specific nature, timing, or precipitating factors. In short, complaints were commonly accepted without question and therapy administered without much investigation. The complete interaction between physician and patient was in many ways foreign to us as Western observers; we have lots to learn about observing.

Traditional methods such as acupuncture and moxibustion are practiced with skill and effect. Others, such as drinking mare's milk for the treatment of tuberculosis seemed quaint and of unclear benefit to our naive eyes. Practices learned in Soviet block medical institutes were likewise eye-openers. Ultraviolet irradiation of blood for allergic disorders, and ultrasound therapy for ear infections were unfamiliar to us. Anesthetic technique was severely limited by lack of equipment for even simple spinal anesthesia.



Traditional nomadic dwelling or yurt.

Our Mongolian hosts were capable, caring and compassionate physicians. They enjoyed academic interactions and eagerly sought information and discourse. Our surgical team operated with Mongolian physicians and learned valuable techniques from skilled surgeons. Cholecystectomy, craniotomy, and septoplasty were some of the procedures performed. A vaginal footling birth was attended by our obstetrician and colposcopy was introduced. Internists saw advanced illness in young patients, and helped with diagnosis in many. A ventricular septal defect in a 14-year-old boy, and deforming rheumatoid arthritis in a 24-year-old woman were but two previously undiagnosed conditions we encountered.

Mongolian health authorities identified the development of primary care, control of infectious diseases, child health, and immunization programs as the nation's premier health care priorities. Tuberculosis, meningitis, hepatitis B, STDs, and scabies are increasing in frequency. AIDS remains a reportedly negligible problem with only one reported case to date. Bubonic plague is endemic during marmot-hunting season.

We met a group of capable physicians, and found a tradition of hospitality that made the journey a priceless experience for all. The striking poverty and severity of illness encountered reminded us of all we have to share, and of our responsibilities as physicians to do so. We will return to Mongolia in the years to come with a better understanding of how to learn from Mongolia, and how best to give of ourselves.

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Al Castle, Director of Development

The John A. Burns School of Medicine, preparing to celebrate its 30th anniversary in 1997, is a small, nationally respected medical school. Its national prominence comes from a combination of excellent leadership, a strong faculty, the growing reputation of its graduates, its high admission standards, and a strong record of private sector financial support.

JABSOM receives about 30% of its total budget from the State of Hawaii. The rest of the annual operating budget comes from service contracts, gifts, grants, and federal research and training dollars. Considering the major impact the school has in the state—virtually every resident is served in some way by the school—JABSOM is a bargain for Hawaii.

With growing demands on the resources of JABSOM, however, changes in the way health care is managed and the uncertainties surrounding public financing of education, the medical school will need to find additional sources of funding from the private sector.

In line with national trends for funding medical schools, JABSOM will seek mutually beneficial, collaborative relationships with corporations, additional funding from charitable foundations, and cash and planned gifts from patrons, alumni, faculty and staff, and physicians in Hawaii. Currently, such gifts are used to support student scholarships, library acquisitions, computers and other instructional equipment purchases, student professional activities, faculty professional development, medical and basic science research, and program development.

Of particular interest is JABSOM's ability to offer tax-advantaged life-income planned gifts through the UH Foundation.

Gifts to JABSOM may be arranged as part of an estate plan in many advantageous ways including the following:

Giving through a will can be a convenient way to leave a philanthropic legacy. After providing for loved ones, a benefactor might decide to give a specific amount, a percentage of an estate, or all or a portion of what remains after individuals have been remembered. Often a gift by will can be arranged simply with the addition of a codicil to an existing will.

Giving through revocable living trusts.—More people now use a living trust to provide for management and final distribution of their assets. A simple amendment to a living trust can be all that is required to arrange a gift.

Gifts that give back.—A donor can make a gift today and retain an annual income for the remainder of his or her life (and perhaps that of a loved one) through the use of charitable remainder trusts and similar gift plans; these plans also yield an income tax deduction in the year the gift is completed. They may be used effectively in planning for retirement, caring for older relatives, and covering educational expenses for children or grandchildren.

Such gifts can convert appreciated, low-yielding assets to a source of additional income without incurring capital gains taxes at the time of the gift.

Donations that provide a lifetime income can be made for as little as $5,000 to the University of Hawaii *pooled income fund.* Pooled funds allow donors to transfer cash and appreciated securities to an investment fund held by a corporate trustee, and to receive regular interest payments, proportionate to their share in the fund, for the rest of their lives. Donors also get tax breaks for making a charitable contribution.

Arranging a temporary gift.—Charitable gifts that result in immediate funding for a charitable interest can be made for a period of time, with assets eventually returned to the donor or to other non-charitable beneficiaries.

Assets can be set aside in a *charitable lead trust.* Payments from the trust go for charitable use for a chosen length of time. The assets in the trust are then returned to the donor, his or her family, or others.

Giving through life insurance can allow a gift of assets no longer needed for one's family's security. A donor can give existing policies or assign proceeds to be paid in part or in full to charitable beneficiaries.

If the policies have served their original purpose, for instance, to educate children or protect a spouse who no longer needs protection, consider letting these policies do double duty by naming a charitable beneficiary. Income and estate tax benefits may result from such gifts.

A donor might also consider using tax savings to purchase a policy designed to replace the assets that have been earmarked for charitable use.

Through gifts of cash, appreciated real estate, stocks and bonds, and planned gifts, there are opportunities to shape Hawaii's medical education and delivery system's future. A development officer can be contacted at the University of Hawaii Foundation by telephoning (808) 956-5105.

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Hepatic Cryosurgery: Early Experience in Hawaii

Linda L. Wong MD, Whitney M.L. Limm MD, Alan H.S. Cheung MD, Fong-Liang Fan MD, Livingston M.F. Wong MD

Liver cancer, both primary and metastatic, is often deemed hopeless and patients with advanced disease cannot be offered a treatment that is completely effective. Surgical resection is the treatment of choice, but less than 20% of patients are candidates for this treatment.

Hepatic cryosurgery is a relatively new procedure in which the tumor is localized intraoperatively with ultrasound guidance and exposed to liquid nitrogen at -196°C. Nine cases have been performed in Hawaii, and we present the first four cases here. Of these cases, there were no mortalities and only one patient required blood transfusion. All patients currently are alive with up to 11-month follow-up. Longer-term studies will be necessary to assess the effectiveness of this modality.

Primary hepatic neoplasms account for more than one million deaths a year worldwide. There is considerable geographic variation—as low as one death per 100,000 in the U.S. and as high as 100/100,000 deaths in parts of Asia and southern Africa. Risk factors for hepatoma include the presence of viral hepatitis B and C, exposure to certain toxins (aflatoxins or thorotrast), primary biliary cirrhosis, hemochromatosis, and alcoholic liver disease. Any chronic liver disease can predispose a patient to liver cancer and 70% of all hepatocellular cancers occur in those with cirrhosis.[1] Typically, symptoms occur late and most patients present with advanced disease.

Metastatic liver cancer frequently originates in the gastrointestinal (GI) tract, but can come from any primary tumor in the body. Colorectal cancer is the most common GI malignancy that metastasizes to the liver. More than 138,000 patients in the U.S. will develop colorectal cancer, and 55,000 will die of it yearly. Nearly 70% of patients who die of colorectal cancer will have metastatic lesions to the liver.[2]

The only potentially curative therapy for both primary and secondary liver cancer is surgical resection and liver transplantation in certain circumstances. The magnitude of this problem lies in the fact that less than 20% of all patients will be candidates for surgery and other therapies, such as chemotherapy, chemo-embolization, intrahepatic artery chemotherapy, and percutaneous ethanol injection, used only for palliative or adjunctive therapies. Hepatic cryosurgery is a new surgical treatment used to eradicate disease and possibly improve long-term survival. It can be used for unresectable lesions because of the presence of multiple lesions, bilobar disease, poor liver reserve, or proximity to major vessels. Morbidity and mortality are low and early studies are promising. In essence, it increases the number of patients who are surgical candidates and provides them with a potential cure. Early studies are promising; however, the long-term benefit of this treatment needs to be studied.

Methods and Materials

The four cases of hepatic cryosurgery performed at St Francis Medical Center all underwent general anesthesia with placement of central venous and arterial catheters for monitoring. Body temperature was carefully monitored and a Bair Hugger® was used for warming. All lesions were biopsied prior to treatment. All procedures were performed using a Cryotech LCS 2000 cryosurgical system with intraoperative ultrasound guidance. Various probes were used to freeze the tumor with liquid nitrogen to -180°C to -190°C: 5 mm, 10 mm, and flat. Each lesion was frozen until a halo of normal tissue measuring about 1 cm could be seen around the tumor on the ultrasound, about 7 to 10 minutes, after which the lesion was thawed completely. Each lesion underwent two freeze-thaw cycles. Areas were carefully inspected for liver cracking and hemorrhage; bleeding was controlled with Gelfoam and suture ligation. All patients remained in the intensive care unit for the first 24 hours and were maintained with mannitol and low-dose dopamine to prevent rhabdomyolysis and acute renal insufficiency. Bleeding parameters were monitored closely and liver enzymes were obtained daily. An ultrasound of the abdomen was done before the patient was discharged. CT scans were used for follow-up at one month, three months, and every three months thereafter and tumor markers were followed.

Case One

A 71-year-old man with Duke's B rectal carcinoma underwent abdominoperineal resection in 1991. No evidence of liver metastases was noted and his medical history was notable for non-insulin diabetes. He remained completely asymptomatic; a follow-up CT scan in September 1994 demonstrated a 2.5 cm lesion in the left medial segment of the liver, and a 1.0 cm lesion in the right lobe. Carcinoembryonic antigen or CEA: 2.0 ng/ml; alpha fetoprotein was normal. Percutaneous biopsies of these lesions were consistent with adenocarcinoma. Chest x-ray and bone scan were negative for metastatic disease. Exploration of the abdomen was notable for micronodular cirrhosis and two liver lesions: a 3.3 cm lesion in the left medial segment just adjacent to the falciform ligament and a 1.8 cm lesion in the right lobe of the liver. Frozen section liver biopsies were not diagnostic for carcinoma and the abdomen was closed. Permanent stains were consistent with hepatocellular carcinoma. The patient returned to the operating room 72 hours later and underwent hepatic cryosurgery on both lesions. He had no intraoperative problems, received no blood transfusions, and was discharged six days following the operation. His highest SGOT was 771. He had mild thrombocytopenia, 75,000/cc, which resolved by the time of discharge. At 11 months post-cryosurgery, he is doing well and the liver lesions have decreased on serial CT scans.

Case Two

A 52-year-old woman with invasive ductal breast carcinoma underwent left modified radical mastectomy and adjuvant chemotherapy in 1986. She did well until 1992 when she developed superior vena cava syndrome as a result of neck node metastases. She also had bony metastases and both areas were radiated. In 1994, she underwent autologous bone marrow transplantation with good response. She had several metastatic skin nodules that were excised. In September 1994, she underwent a routine CT scan of the liver and a 3 cm mass was noted in the left medial segment. The CT scan of the chest/head and bones were all negative. Because the liver mass appeared to be an isolated lesion, and she was in good health otherwise—working and gaining weight—she was considered for hepatic cryosurgery. On December 1, 1994, she underwent exploratory laparotomy and had an isolated lesion in the left medial segment that measured 3.9 cm in the greatest dimension. The biopsy was consistent with a breast primary and she underwent cryosurgery of the lesion. Although no problems were encountered during surgery, 3 U of packed red blood cells was administered postoperatively for a subcapsular hematoma. She also had thrombocytopenia to 60,000/mm^3. She was discharged six days following the procedure but was readmitted a week later with a large right pleural effusion and mild dyspnea that were managed with a tube thoracostomy and pleurodesis. Transient hyperbilirubinemia was detected, probably related to reabsorption of the subcapsular hematoma. Eleven months after surgery she is alive and the liver lesion is smaller; however, she recently developed brain metastases.

Case Three

A 51-year-old woman underwent low anterior resection for moderately well-differentiated adenocarcinoma of the rectum in November 1993. At the time of surgery, she had four metastatic lesions involving both right and left lobes of the liver and ranging from 1.0 cm to 4.0 cm. Postoperatively she received multiple courses of chemotherapy that included 5-FU and leucovorin. Serial CT scans were variable with the lesions sometimes appearing unchanged, and at other times much smaller. Cryosurgery was considered, but CT scans in November 1994 showed an increase in the largest lesion to about 6.0 cm. She underwent exploratory laparotomy and an intrahepatic arterial catheter was inserted. There was no evidence for extrahepatic metastases. She received intrahepatic arterial floxuridine and leucovorin and a decrease in lesion size was seen by CT scan. On February 28, 1995, she underwent exploratory laparotomy which revealed five liver lesions. A 6 cm mass in the left lateral segment was completely excised with segunentectomy. A 1.5 cm lesion at the edge of the right lobe anteriorly was wedge resected. The other three lesions (5.5 cm, 1 cm, and 1 cm) were all in the right lobe and each underwent cryoablation. She had no perioperative problems, received no transfusions, and was discharged seven days later. She is currently alive and the lesions have decreased in size on subsequent CT scans, but she recently has developed several small lesions elsewhere in the liver.

Case Four

A 65-year-old woman was found to have gall bladder carcinoma on elective laparoscopic cholecystectomy for symptomatic cholelithiasis. Her past history is otherwise unremarkable. A CT scan demonstrated a 1.5 cm lesion on the left medial segment of the liver. She underwent five courses of systemic chemotherapy with 5-FU, Adriamycin, and mitomycin-C. After chemotherapy, CT scan with arteriogram/portagram showed no change in the previous lesion and a small mass in the area of the cystic duct. On April 6, 1995, exploratory CT scan with arteriogram/portagram showed no change in the previous lesion and laparotomy showed four sites of metastatic disease. A 1.9 cm mass in the left medial segment was resected. Two small lesions, each less than 1 cm (left lateral segment and right lobe), were treated with cryosurgery. A 2 cm mass near the cystic duct stump was also positive for carcinoma and this was surgically debulked.

Cryosurgery could not be performed on this lesion due to the proximity of the bile ducts. She had no perioperative problems, received no blood transfusions, and was discharged five days following the procedure. Her highest SGOT was 725 IU/L. She also underwent adjuvant radiation therapy to the lesion near the bile duct, as well as brachytherapy through a common duct T-tube placed at the time of surgery. Her lesions have decreased on subsequent CT scans and she is doing well six months after surgery.

Discussion

Cryosurgery is an operative procedure whereby a tumor is localized with intraoperative ultrasound guidance and exposed to liquid nitrogen at -196°C. Use of ultrasound is especially important as it allows detection of lesions less than 2 cm which might otherwise be missed.[3] Cryosurgery has been used to treat both primary and metastatic liver cancers which are not resectable by conventional means due to multiple lesions, bi-lobar disease, poor liver reserve, or proximity to major vessels.

The biology of cryoablation is such that damage occurs primarily due to ice crystal formation. Ice forms in the extracellular fluid and with slow cooling, intracellular fluid migrates across an osmotic gradient to the extracellular space. This leads to cell shrinkage and death. The ice mass is then allowed to thaw and this increases the damage to the cells.[4] Repeating the freeze-thaw cycle has been shown to be more effective than a single cycle.[4-7] Other effects of freezing include denaturing of lipid-protein complexes which disrupts cell membranes and causes leakage of organelles. Freezing also damages the walls of the small vessels, leading to deposition of platelets and thrombus formation. After several days, the frozen lesion becomes necrotic and separates from the normal liver. It is essentially a sterile infarct that eventually becomes encapsulated by fibrous tissue.[4,8]

The advantages of cryosurgery are related to its low morbidity and mortality. Multiple studies have been done with no mortalities.[4-5,9-10] A review of the literature revealed three known deaths—two from hepatic failure and one from cardiac arrest.[7] Complications include liver cracking and hemorrhage which are easily controlled with sutures and packing. Blood loss is considerably less than with a standard liver resection. One unit of blood is the average requirement.[5] Cryosurgery can also injure the bile ducts, as freezing of the ducts can lead to edema and eventually stenosis.[4,11] Mild myoglobinuria occurs in most patients, and alkalization of the urine, low-dose dopamine, adequate hydration, and mannitol have been recommended.[7] Intraoperatively, patients may have mild hypothermia, but this is easily controlled with the use of warming devices such as the Bair Hugger®.[12]

To date, results of cryosurgery to the liver have been comparable to liver resection. Onik et al reported 57 patients with unresectable hepatic metastases and demonstrated a 27% disease-free survival with 21-month follow-up.[7] Zhou et al, in a study of 107 patients with hepatomas, yielded a 22% survival at five years. In smaller tumors (<5 cm) survival was 93.3% at one year and 48.8% at five years.[11] Ravikumar performed cryoablation for either metastatic or primary liver cancer in 24 patients, and 24% had a complete response at 14 months.[13]

Preliminary data also suggest that cryosurgery may be helpful in non-colorectal metastases. Rammings et al treated 16 patients with



Fig 1.—Hepatic cryosurgery of a tumor in the right lobe. A larger (10 mm) probe (single arrow) is used to create an iceball (double arrow) including the tumor and a 1 cm rim of normal tissue. Ultrasound guidance is used to both locate the tumor and observe completeness of the freezing process (triple arrow).

metastases from ovary, breast, thyroid, and neuroendocrine tumors. They demonstrated a decrease in the appropriate tumor markers and an improvement in neuroendocrine symptoms. Mean overall survival was 9.1 months (range 1 to 21 months).[14] Cryoablation can be used to assist in hepatic resection in order to allow clearance of tumor margins.[15] At the moment, the results are not much worse than liver resection and the morbidity is considerably less. Long-term follow-up and controlled studies will be necessary to understand the true benefit of this modality.

Cryotherapy alone can be helpful in liver tumors, but when used in combination with other modalities may prove to be more beneficial. Tang et al, in evaluating unresectable primary liver cancers in 137 patients between 1966 and 1977, noted that the five-year survival was zero. In the period between 1978 and 1989, 345 unresectable liver tumors had a 16.9% five-year survival with the use of cytoreduction (hepatic artery ligation, hepatic artery infusion, cryotherapy, and/or radiation) and sequential resection.[16]

In our early experience, the four patients have undergone cryosurgery for varying tumors including hepatocellular carcinoma, and metastatic lesions from the rectum, breast, and gall bladder. There were no mortalities and only one patient had complications of a subcapsular hematoma of the liver requiring transfusion. Transfusions were not needed in the other patients. Three of the four patients have undergone multi-modality therapy with combinations of liver resection, cryosurgery, chemotherapy, intraarterial chemotherapy, and radiation. All patients are alive and functioning well; however, two patients have had progression of disease including development of metastatic lesions in the brain and elsewhere in the liver. (Since the four cases presented here, we have performed an additional five cases for hepatoma, metastatic breast cancer, and metastatic colon cancer. All patients are alive and without evidence of recurrence at two to five months.) Our results are consistent with those reported in the literature in that cryosurgery is excellent for controlling liver lesions, but lesions can occur elsewhere in the liver.[9] Longer follow-up will be necessary to assess the true benefit of cryosurgery.

Conclusion

Hepatic cryotherapy with ultrasound guidance allows us to treat a greater number of lesions and lesions not surgically resectable with clear margins. Morbidity and mortality are minimal. Although the prognosis with cryosurgery is not significantly better than with liver resection, we must consider that we are treating a group of patients that has a five-year survival of zero. Perhaps the addition of cryotherapy will allow us to improve on the dismal outlook of metastatic and primary liver cancer, using a technique that has minimal morbidity and mortality.

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Kidney Stone Center of the Pacific Summary of Operations 1986 to 1993

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In Memory of Doris Oshiro RN First Supervisor, Kidney Stone Center of the Pacific

The history and operational results in the six years since the Kidney Stone Center of the Pacific opened in 1986 are summarized and compared to the published literature, with particular attention to Hawaii's unique racial composition. We hope that the results will enable us to improve our management of stones in the future.

Background

The Kidney Stone Center of the Pacific began operations in December 1986; by the end of 1993, a total of 2,945 patients had been treated. The Kidney Stone Center of the Pacific is a cooperative venture of three entities: Kuakini Development Corporation, Queen's Health Technologies and Straub Imaging Services, all located in Honolulu.

In the mid 1980s the Dornier company of Germany developed the extracorporeal shock wave lithotriptor (ESWL).[1] This machine used shock waves generated by a large spark-plug-like device transmitted through water to fragment kidney stones, which could then be passed as sand-like particles through the ureter. The shock waves are aimed by using fluoroscopy to visualize the stone and are controlled by the patient's electrocardiogram (Fig 1).

Before this time, stones usually had to be removed by incising the patient, which required hospitalization and a long period of convalescence. Complications of surgery included bleeding, infection, and urinary leakage.

Lithotripsy represented a revolution in the treatment of stones; now patients could be treated as outpatients and the risk of complications was greatly reduced. Urologists in Hawaii saw the benefits of the machine and discussed how to obtain one to serve the Pacific. However, several obstacles had to be overcome.

The cost of the machine was $1.5 million, not including the space and support equipment, which brought the total cost to about $3 million. At one point a partnership of urologists was considered that would purchase, set up, and operate the machine, but that was rejected as being impracticable. Instead, interested hospitals were invited to participate. All of the hospitals on Oahu were asked to participate; finally, three hospitals contributed equal amounts of capital and combined their expertise to form the Kidney Stone Center of the Pacific. Each partner contributed support; for example, Kuakini was responsible for marketing, Queen's for scheduling and operations, and Straub for the business plan.

The location of the lithotriptor was the subject of much discussion. At first, a neutral site was considered; however, this was impracticable because ancillary services such as cystoscopy, x-ray, and post-anesthetic recovery were required. This meant a hospital site was needed, and Queen's was selected.

Meanwhile, a state review process by the State Health & Pharmacy Development Agency (SHPDA) was required. At first, there was skepticism by the board that there was a need for a machine. However, thanks to testimony by the urologists and hospitals, approval was granted and construction began.

On December 10, 1986, the first patient was treated on the Dornier HM-3. The original lithotriptor, now seven years old, continues to serve Hawaii and the Pacific today. It represents an example of the benefits of a cooperative, rather than competitive and more costly, approach to health care in Hawaii.

Review of Operations 1986 to 1993

Data Analysis

Patient records have been maintained on a personal computer using the Q & A data base since the Kidney Stone Center began operations. Standardized reporting forms permitted the collection of data in a systematic manner. The data was extracted on the computer using different criteria. Of course, the data retrieved is only as good as the data input, which is why it was important to complete the forms as thoroughly as possible.

Total Patients Treated

The total number of patients treated from December 10, 1986 to December 31, 1993 was 2,945 or about 500 patients a year (Fig 2). The total number of patients treated has remained fairly constant over the years. There was not a great monthly variation in patients treated. This information has been useful in planning for staffing and equipment allocation. Compared to national statistics, in a study of more than one million patients, Hawaii had a stone rate of 8.2 which was about average for the nation.[2]

Age of Patients

The oldest patient treated was 92 years old; the youngest, 4 years and 9 months. The average age of the patients was 43, with a mean of 40 years. Very young patients, because of their small stature, required a special arrangement of the lithotriptor gantry. Other than that, no special techniques were required for patients because of their age.

Gender

Sixty percent of the patients were male and 40% were female, which is in keeping with published statistics for stones. The literature reports that up to 70% of patients were male.[3]

Race

Hawaii has a unique mixture of races. In fact, in analyzing the data, many times determining the race of the patient was a problem because of the number of ethnic backgrounds. Of the patients treated at the Kidney Stone Center, the majority were Caucasian. It is

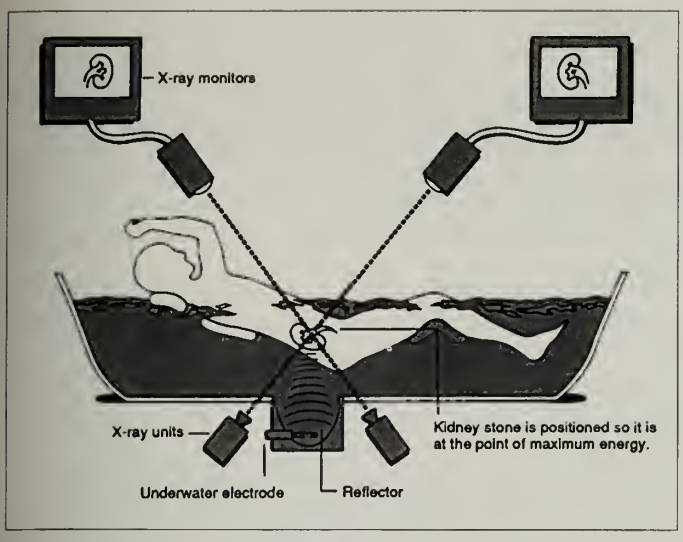


Fig 1.—Schematic of lithotriptor

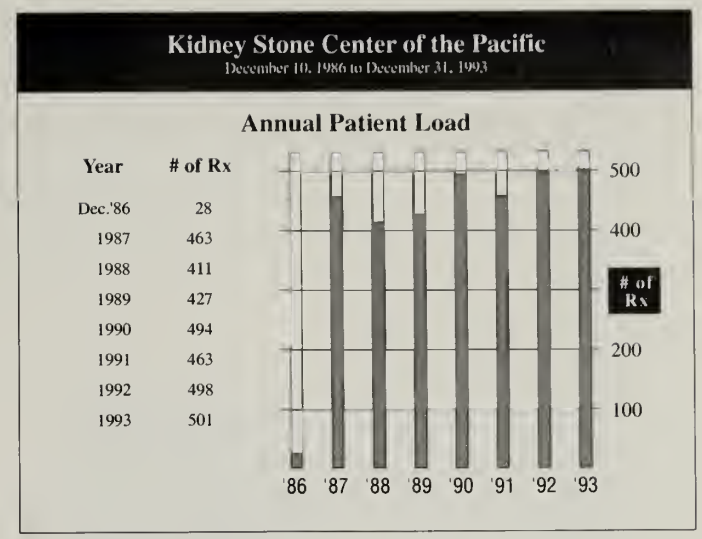


Fig 2.—Annual treatment load

interesting to compare the observed incidence of stones with the population makeup of the state (Fig 3). For example, Caucasians accounted for 34.16% of the general population in the 1990 census and represented 34.35% of the stones. Filipinos were overrepresented, comprising 15.59% of the state population, they accounted for 20.41% of the stones. The Japanese, Chinese, and Hawaiians were underrepresented.

Source of Patients

The lithotriptor serves the Pacific region including islands in the South Pacific. Non-Hawaii residents accounted for 10.6% of the treatments, including patients from the continental United States, Pacific Islands, Japan, Australia, American Samoa, Guam, and Canada.

Location of Calculi

Renal calculi accounted for 84% of the stones, with ureteral calculi representing 15.6% of the stones. Single stones were found in 69% of the patients, with multiple stones in one kidney in 21%. Single stones in both kidneys were 5% of the group, with multiple stones in both kidneys found in another 5%. Again, this is in accordance with ranges found in the published literature.[2,6]

Size of Calculi

The calculi ranged in size from <1 cm to >9 cm, and as expected, there were more smaller stones. The size of the stone is significant because the larger stone requires more shocks than the smaller one, thereby increasing the patient's exposure to shock wave energy and greater complications. In fact, some larger staghorn calculi can be treated best with percutaneous nephrostolithotomy, in which the calculi are removed through a small opening in the patient's back. As expected, the smaller stones were more prevalent.

Number of Shocks

The amount of energy varied. The mean was 21 kV with a range of 14 kV to 28 kV. The number of shocks ranged from 300 to >5000 per treatment, and the median number of shocks was 1,500 to 2,000. Generally, the larger the stone, the more shocks required. Some stones, such as uric acid stones, are harder and require more shocks. The number of shocks was less for smaller stones and increased as the stone size increased, but seemed to stabilize at about 2,500 to 2,700 shocks in the range from 4 cm to 9 cm.

Types of Stones

Stone analysis was incomplete because many of the patients had no data that could be gleaned from the records. This is expected because the data is pretreatment and, of course, stone analysis has not yet been performed. Of the 656 cases that could be evaluated, 77% had calcium oxalate, 16% uric acid, and 7% struvite. A large study indicates that the Mainland incidence of the different types of calculi are 80% calcium oxalate, 7% struvite, and only 3% each of uric acid, cystine, and calcium phosphate.[2] It is interesting to note the racial differences in relation to the type of stone (Fig 4). The only other study from Hawaii addressing this issue was published in 1970.[7] In this study, it was noted that Tripler Army Medical Center patients, who were 82% Caucasian, had only 2% uric acid calculi, while patients at St Francis Medical Center, who were 29% Caucasian, had a 29% rate of uric acid stones. When broken down, uric acid stones accounted for 30% of the stones among the Chinese, Japanese, and Filipino population. This compared to the 14% rate of uric acid stones in Caucasian patients at St Francis Medical Center. The authors noted this and suggested diet could have played a role.

Our experience more than 20 years later seems to indicate that we are seeing fewer uric acid calculi since the overall rate among the general population was 16%. However, that is still high by national standards. It is interesting to note that the Filipino and Chinese rates of uric acid stones were low, while the rate among Japanese and Hawaiian patients was significantly higher. We can only speculate about the reason for this, but diet might still be a factor.

Retreatments and Complications

Retreatments accounted for 10.7% of the cases. This is in line with the reported literature, which reports a retreatment rate of 9% to 17%.[3-6]

The rate of retreatment is particularly important because it illustrates the degree of effectiveness of treatment. We believe our figures are accurate because there is only one site for treatment with ESWL in the state.

Complications have been low, less than 1%. They have included occasional pain and nausea; however, there have been no deaths directly attributable to ESWL.

Radiation Exposure of Personnel

One of the concerns of treatment was the exposure of the staff and physicians to radiation with the use of fluoroscopy and snapshots.[8]

Radiation exposure using fluoroscopy was measured by the amount of time and number of snapshots. This ranged from <1 minute to >16 minutes, the mean was about 3 minutes. The number of snapshots taken ranged from 0 to 55 and more, which compares well with published reports from other facilities.

The radiation exposure delivered to the patient can be calculated from the fluoroscopy time and number of snapshots using measured radiation output. From the above data, the patient exposures ranged from 0.04 Gy to .21 Gy with an average of .12 Gy. This is similar to the dose delivered during other fluoroscopic procedures, such as an upper gastrointestinal barium study.

The walls and water of the stainless steel tub attenuate the scatter radiation quite effectively. This means that the radiation exposure in the vicinity of the ESWL tub is negligible, and the staff is not required to wear lead aprons during the procedure.

We have used the radiation usage and exposure for individual physicians in order to increase awareness and enable more efficient use of x-rays.

Future Studies

Our data collection has given us insight into how the Kidney Stone Center has been performing, and the retreatment rate of 10.7% falls within generally accepted standards. In the future, we will be focusing more on post-treatment outcomes. We have instituted a program of follow-up phone calls to the patients to assess their state after the treatment, focusing not only on the effects of lithotripsy, but on anesthetic effects. In this way we hope to improve patient care at the Center.

Summary

The Kidney Stone Center, now more than seven years old, has served Hawaii well. It has fulfilled its mission of serving the people in Hawaii and the Pacific Basin. During its tenure, it has provided state-of-the-art treatment and improved patient care; it has resulted in a significant net savings in patient discomfort, complications, lost work time, and hospitalization. It serves as a model for other cooperative ventures, especially in light of our limited geography and population.

Technological progress has resulted in the production of newer lithotriptors that use different means of shock-wave generation and require less anesthesia or no anesthesia at all.[9] The Kidney Stone Center is evaluating the feasibility of upgrading its lithotriptor.

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Recurrent Chylothorax Associated with Sarcoidosis

Robert J. Lengyel MD, Dean J. Shanley DO

Spontaneous chylothorax, an uncommon manifestation of pulmonary disease, has been described in association with infectious and inflammatory conditions involving the chest, thoracic trauma, and thoracic neoplasms. Isolated chylothorax is a rare manifestation of sarcoidosis and is usually associated with the presence of mediastinal and hilar adenopathy causing obstruction of the thoracic duct. We report a case of recurrent spontaneous chylothorax in a patient with parenchymal sarcoidosis without hilar or mediastinal adenopathy.

Chylothorax is usually the result of compromise of lymphatic flow through the thoracic duct. Neoplastic processes and trauma account for the majority of cases of chylothorax described in the literature.[1-2] Other etiologies include infectious and inflammatory diseases, congenital malformations of the lymphatics, and idiopathic causes. Sarcoidosis has rarely been reported as a cause of isolated chylothorax; three case reports in the literature describe patients with extensive intrathoracic adenopathy associated with sarcoidosis and complicated by chylothorax.[3-5] The following report describes a patient with parenchymal sarcoidosis only, complicated by recurrent right chylous effusions.

Case Report

A 42-year-old black man complained of increasing shortness of breath and right pleuritic chest pain during the past six months. The patient denied any history of recent or remote thoracic trauma. He was diagnosed with sarcoidosis six years prior and had experienced recurrent right-sided chylous effusions for more than two years despite corticosteroid therapy. Thoracentesis was performed monthly during the past year to relieve recurrent symptoms of shortness of breath and pleuritic pain.



Fig 1.—42-year-old man with stage III sarcoidosis complicated by recurrent right chylothorax.

The admission chest radiograph (Fig 1) showed a large right pleural effusion and diffuse reticular nodular infiltrates involving both lungs. No evidence of hilar or mediastinal adenopathy was present. Findings were consistent with stage III (parenchymal) sarcoidosis. CT scan of the chest (Fig 2, 3) was obtained and confirmed the presence of a large right pleural effusion and bilateral reticular nodular infiltrates. The nodular opacities were small, innumerable, less than 1 mm in diameter and distributed diffusely throughout the parenchyma. Small densely calcified lymph nodes were identified in the mediastinum; no enlarged lymph nodes were present.

The patient opted for surgical intervention because of the chronic nature of the effusion and lack of efficacy of conservative therapy. The patient subsequently underwent right thoracotomy which revealed a large chylous effusion, a dilated thoracic duct, and periductal adhesions. Approximately 1.5 L of chylous fluid was removed from the right hemithorax. The thoracic duct was ligated and divided, followed by physical and chemical pleurodesis. The patient did well postoperatively and follow-up chest radiographs over a six-month period showed no recurrence of the chylous effusion.

Discussion

The thoracic duct normally ascends into the thorax through the aortic hiatus and maintains a position to the right of midline. The

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Fig 2.—CT Scan of the chest shows a large right pleural effusion which proved to be chylous. Bilateral reticular nodular infiltrates are present throughout the lungs.

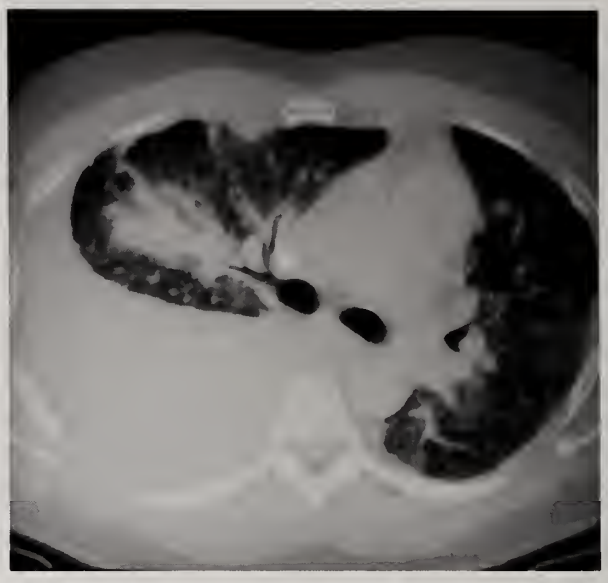


Fig 3.—CT scan of the chest using mediastinal (B) and lung (C) windows shows large right chylous effusion. Reticular nodular infiltrates are better demonstrated using lung windows. Small calcified lymph nodes are present, anterior to the right main-stem bronchus.

duct crosses obliquely to the left at approximately the level of the fourth or fifth thoracic vertebral body and continues to ascend into the left neck region for several centimeters. The duct then courses downward to join the venous system near the junction of the left internal jugular vein and subclavian vein. Obstruction or disruption of the thoracic duct anywhere along its course can lead to the development of chylothorax. Injury or obstruction to the lower portion of the duct typically results in a right chylous effusion, whereas involvement of the most cephalad portion of the duct usually results in a left chylothorax.[1]

Spontaneous chylothorax, although an uncommon manifestation of intrathoracic disease, has been reported in association with neoplastic processes, benign conditions, and trauma involving the chest.[1-2,6-7] Nix et al reviewed 302 cases of chylothorax and chylous ascites, of which 123 cases were of isolated chylothorax.[1] Of those cases of isolated chylothorax, approximately 55% of cases were traumatic in origin and almost 45% were spontaneous in nature. Thoracic surgery accounted for the majority of cases of chylothorax complicating *penetrating* trauma, and thoracic trauma without bony fracture resulted in the majority of cases associated with nonpenetrating trauma. Malignant neoplasms, especially lymphoma, resulting in extrinsic or intrinsic lymphatic obstruction account for the vast majority of spontaneous chylothoraces.[2] Benign lymphadenopathy is a less common cause of spontaneous chylothorax, contributing to less than 10% of the chylothoraces reviewed by Nix et al.[1]

Three previous cases of sarcoidosis with an associated chylothorax have been reported. Aberg et al reported extensive mediastinal and thoracic adenopathy causing obstruction of the thoracic duct, seen at postmortem examination.[3] Haigli and Keller reported mediastinal and hilar adenopathy, although the thoracic duct appeared unaffected at thoracoscopy.[4] The pathogenesis of the chylothorax was unclear and it gradually cleared after long-term corticosteroid treatment and pleural drainage. In a more recent case reported by Parker et al, a young woman with sarcoidosis developed a right chylous effusion and worsening mediastinal and hilar adenopathy within three months of fiberoptic bronchoscopy and transbronchial biopsy.[5] Thoracentesis and oral corticosteroid therapy resulted in resolution of the chylothorax.

Although spontaneous in nature, our patient's recurrent chylothorax was likely caused by the presence of periductal adhesions visualized during surgery, resulting in obstruction to the flow of lymph within the thoracic duct. Our patient had undergone transbronchial biopsy six years prior to the development of a persistent chylothorax, so there is no immediate temporal relationship between the effusion and the biopsy. Mediastinal and hilar adenopathy were present in our patient when the diagnosis of sarcoid was established six years prior; however, the adenopathy had regressed within two years. Imaging studies during the past four years showed no evidence of abnormally enlarged lymph nodes in the hilar regions or mediastinum, and the patient remained asymptomatic except for complaints of shortness of breath and pleuritic chest pain related to the recurrent chylothorax. During the progression of our patient's sarcoidosis fibrotic changes in the pleural space and perinodal regions probably contributed to the formation of periductal adhesions, gradual obstruction of the thoracic duct, and the development of recurrent chylous effusions. Unlike previous reports, this case is of interest because the recurrent chylothorax associated with sarcoidosis developed in the absence of lymphadenopathy, presumably caused by fibrotic changes in the pleural space and perinodal regions contributing to the formation of periductal adhesions and gradual obstruction of the thoracic duct.

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News and Notes

Henry N. Yokoyama MD

Life in These Parts

Conference Notes: "Preventive Cardiology" Lecture by Straub cardiologist Roger White at Hilton Hawaiian Village on April 1, 1995.

Introduction

- Inscription on Egyptian scroll: A heart light as a feather means a good life...Twenty correct commandments gets one to heaven.
- Framingham studies on arteriosclerosis: 1/3 angina; 1/3 sudden death; 1/3 infarction, viz, 2/3 of the patients have catastrophic events as a presenting symptom.

Cardiac Risk Factors

- Age
- Male sex
- Family history
- Cholesterol
- Hypertension
- Diabetes
- Sedentary lifestyle
- Stress
- Smoking

(all are correctable factors)

Cholesterol

LDL: less than 150; HDL: greater than 50; triglyceride: less than 200 (triglyceride level varies with diet; elevated in diabetes)
LDL below 80 can reverse atherosclerosis
HDL: Hereditary; women have high HDL values until menopause; ERT raises HDL.
LDL: Hereditary; a/c diets high fats, eg, dairy products, saturated fats, a/c obesity, low fiber diets, sedentary lifestyle.
HDL: related to heredity and sex; increases with regular exercise; increases slightly with cold-water fish; rises with alcohol intake (1 glass wine); decreases with smoking.

- Cholesterol control: a/c optimal weight; limit fat content; high fiber; exercise; monitor blood levels; treat metabolic hyperlipidemia
- Reversal of atherosclerosis is next frontier: "Statins" are easy to take and have low incidence of side effects.

Hypertension

- May be hereditary.
- Increased risk with high-salt diet.
- Alcohol can raise BP.
- Sedentary lifestyle.
- Obesity.
- Evalutate for secondary causes (eg, renal, endocrine, vascular problems).
- Stress
- Interrelate with diet, exercise, lifestyle; self-monitoring important for adequate control; medical treatment; exercise.

Diabetes

- Weight reduction.
- Self-monitoring.
- Medical treatment.
- Reduce risk of complications.
- Exercise helps control.

Smoking

- 50% greater risk for sudden death in smokers.
- Short-term effect on vasoconstriction.
- Long-term cumulative effect.
- Lowers HDL.

Exercise

- Aerobic (walking, swimming, jogging).
- Sustained (ie, 30 to 60 min).
- Regular (3 to 4 times a week).
- Warm up and cool down.
- Should be enjoyable.

How to reduce heart attacks?
Aspirin; fish oils? garlic? vitamins? walnuts; ginseng; alcohol; caffeine?
To avoid heart attacks?
Stay young; nonsmoking woman; choose parents with no heart disease; eat a modified Italian-Chinese diet and take 1 aspirin/d; exercise; drink 1 glass of wine/d.
(Roger White waxed philosophical as he enumerated the following doctrines)
To reduce MI:

- Avoid hurry
- Avoid worry
- Avoid curry (has coconut oil)
- Do not be obsessed with longevity
- Enjoy the quality and miracle of everyday

The joy is in the journey!

Classified Notices

To place a classified notice:
HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.
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The Weathervane

Russell T. Stodd MD

If he had rubber pockets, he could steal soup.

A jury found ophthalmologist Jeffrey Rutgard of La Jolla, California, guilty of running an insurance mill that cheated Medicare, CHAMPUS, and private insurers of $16 million for unnecessary eye surgery. The judge threw the book at this buccaneer and ordered him to pay $150,000 in fines, $15.9 million in restitution, and to serve 11 years and three months in jail. Doctor bashing is a favorite media space filler, and criminals like Jeffrey Rutgard provide fodder that critics will repeatedly cite. Unfortunately, organized medicine has no way to penalize such villainous outlaws beyond an appeal to the state medical board.

A patriot must always be ready to defend his country against his government.

It should be funny, but who's laughing? On average, Medicaid paid doctors $123.04 for each beneficiary cared for last year in Kentucky. A taxicab company, by comparison, collected $125.65 from Medicaid for each beneficiary they trucked to the doctor's office in the same time period. Result—Medicaid reduced doctors' reimbursement by 20%. This is true! Question—Does this mean that Medicaid equates 12 years of higher education with two weeks of driving school?

Why buy a politician? It's cheaper to rent them.

In Illinois, the legislature and Republican Governor Edgar are badly in need of education. The Governor recently signed a bill that will permit optometrists to treat glaucoma, infection, and inflammation of the eyes. A related story in the state of Oregon is that optometrists are now legally described as "optometric physicians," despite the protests of numerous medical groups. The title of doctor has been cheapened by many organizations and diluted to include virtually any occupation, even including doctor of sanitation (garbage collector). Physician, however, has historically been reserved to indicate "doctor of medicine." The busy pretenders accomplish with legislation that which they are unwilling or unable to obtain through education.

Nothing is so firmly believed as that which we least know.

The ozone hole sky watchers claimed in *Newsweek* four years ago that the rise in UV exposure in southern Chile in October 1992, when atmospheric ozone reached record lows, was causing sheep and bunnies to go blind with cataracts, and that people were suffering from UV-related skin and eye diseases. But a study by a Johns Hopkins research group reporting in the *American Journal of Public Health*, found no significant rise in acute UV-related skin and eye problems. Veterinarians examined 224 local sheep and found no blindness, and of 17 rabbits they found only one had cataracts. The report stated that southern Chileans experienced a mere 1% increase in UV exposure. Maybe the sky isn't falling after all.

A little inaccuracy sometimes saves tons of explanation.

A patient underwent back surgery and was anesthetized for 7-1/2 hours. Upon awakening he had almost total loss of sight in his left eye. Later he sued the anesthesiologist and nurse anesthetist, claiming that improper positioning and monitoring had caused the injury. A trial court returned a verdict for the defendants, and the patient appealed on the basis that the doctor had failed the anesthesia board exams. The court found no merit in that argument, and stated that evidence of test failure is not sufficient to impeach the anesthesiologist's credibility as an expert.

Money, to be worth striving for, must have blood and sweat on it—preferably that of someone else.

As tourists flock to our captivating island state, one might think that our individual buying power is falling below that of foreigners. Visitors often give the impression of great wealth, because they can take advantage of the favorable exchange rate. Not true! No foreign country even approaches the U.S. for annual individual spending. Switzerland is the closest at 83.4% per capita spending compared with Americans.

They couldn't decide to have a child or buy a dog—whether to ruin their carpet or their lives.

As if organized medicine was not troubled aplenty for failure to monitor itself, the fertility reproductive researchers at University of California at Irvine are under fire for allegedly conducting unauthorized research by transferring eggs and embryos from unconsenting donors to other women. Some of the women bore children as a result. The university closed the clinic and has accused the doctors of as many as 40 instances of egg and embryo "misappropriation" (Is that the right word?). Cecil Jacobsen MD, a research shining star for his work in amniocentesis, was found guilty in 1992 of using his own sperm to inseminate infertility patients. The medical field is regulated only by standards set by the American Society for Reproductive Medicine, but adherence to the standards is voluntary.

"She hate's California—it's cold and its damp."

California has been the land of promise and opportunity, and during the booming 1980s, the state enjoyed an annual increase in domestic arrivals of 90,000 per year. Now, because of weakened economic conditions, an out-of-control litigation system, prohibitively rigorous environmental regulations and oppressive taxes, business has been hurt, and people are leaving in droves. In the 1990s, 687,000 have departed for other pastures, and 300,000 in 1993 alone.

Addenda

- More that 90% of lawsuits filed against doctors in the U.S. each year are without merit, and thus go nowhere.
- America's most expensive public health problem is automobile trauma: $137 billion is lost annually in medical bills and lost productivity.
- Only 4% of Americans didn't eat at McDonald's last year.
- If you can find something everyone agrees on, it's wrong.

Aloha and keep the faith—rts ■

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Council Highlights

October 29, 1995
Roger T. Kimura MD, Secretary

The HMA Council was called to order by Carl W. Lehman, President at 12:00 pm.

Present: J. Spangler, President-elect; F. Holschuh, Immediate Past President; R. Kimura, Secretary; L. Howard, Treasurer; AMA Delegates: C. Kam, R. Stodd; Alternate AMA Delegate: A. Kunimoto; Speaker: H.K.W. Chinn, Vice-Speaker and Honolulu County President: P. Blanchette; Component Society Presidents: M. Joshi, of Maui, T. Smith of West Hawaii; Councilors: T. Au, D. Canete, P. Chinn, W. Dang, Jr, P. DeMare, M. Shirasu, R. Wong, W. Young, J. Betwee, P. Kim, C. Kadooka; Past Presidents: W. Chang, A. Don, G. Goto, J. Kim, J. Lumeng, J. McDonnell, S. Wallach; Young Physicians Section: C. Goto; HMA Alliance President: C. Gutteling, President, K. Zelko, V. Lau, S. Lim, and L. Cecil.

HMA staff: Jon Won, N. Jones, B. Kendro, L. Tong, J. Asato, J. Estioko, P. Kawamoto, A. Rogness, recording secretary.

- The HMA Alliance reported that the pace of the Alliance is changing on the Big Island.
- There are active male members of the Alliance. The Alliance will be able to help HMA physicians in community relations and is looking forward to a working partnership with the HMA.

For Action

A motion was carried that the provision in the No-Fault law presented by Dr B. Portner be referred to the No-Fault and Legislative Committees for study for a report to Council or the Executive Committee.

A motion was carried that the HMA maintain the five year increment membership dues system for physicians in first year practice.

Physicians were alerted that they would be receiving a letter from the Montana-Wyoming PRO asking for their support.

A motion was carried that Dr Holschuh and Mr Won write a resolution on blood alcohol levels to be presented at the AMA Interim meeting in December. The resolution would request that the AMA look at the policies of the Scandinavian countries. Their data could be used nationally for educational purposes.

A motion was carried that the dean of the medical school meet with the HMA Executive Committee and vice-chairs of the CME Committee to work out a suitable financial arrangement.

For Information

AHEC.—The federal government has granted $2 million in AHEC funds for the State of Hawaii. The AHEC program will improve primary care services for underserved populations by training health profession students in community settings.

CIVS.—The HMA has been working with two organizations who have completed a business plan and the CIVS steering committee has reviewed the information. It is complete and very reasonable. As soon as Mr Won has put figures together, he will meet with the Steering Committee.

Alternative Healing Seminar.—Dr Holschuh reported that the seminar was impressive. He will do a write-up on the seminar and plans to suggest that HMA have a few of the speakers at the HMA Annual Meeting.

Medicare.—The AMA sent a memo to surgeons on the single conversion factor. According to OBRA 93, in seven years physicians reimbursements would be 30% to 40% lower than today. Based on a single conversion factor, physicians won't lose the 30% to 40% but will still be reimbursed lower than what they should be getting.

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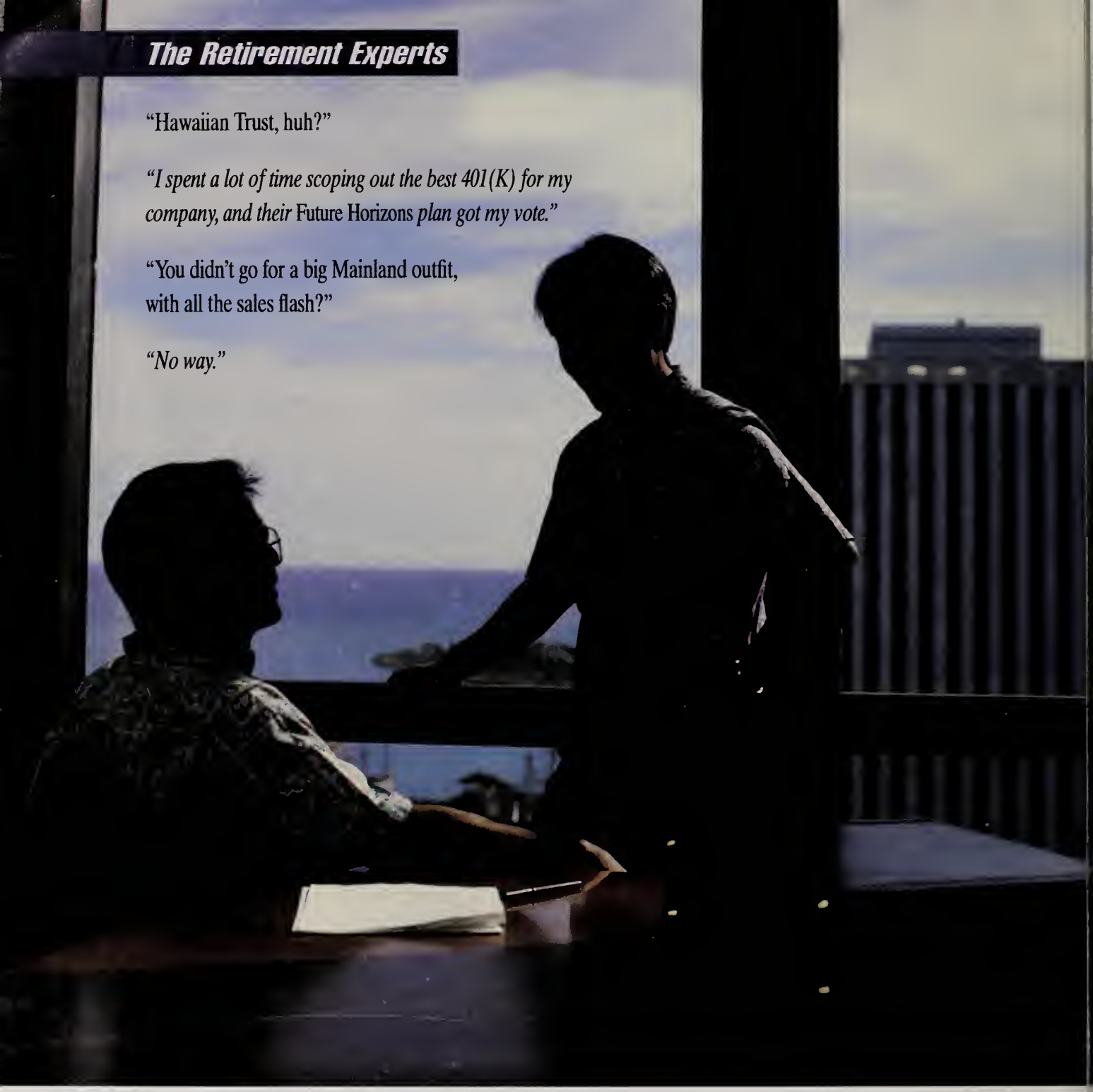
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